

EXPERIMENTS

AND

OBSERVATIONS

ON THE

ANGUSTURA BARK.

BY

AUGUSTUS EVERARD BRANDE,
APOTHECARY TO THE QUEEN.

THE SECOND EDITION,
ENLARGED.

Crescit occulto velut arbor ævo
Fama— Hor.

LONDON:

PRINTED BY GEO. STAFFORD,
CRANE-COURT, FLEET-STREET,
FOR T. PAYNE, NEAR THE MEWS-GATE.

1793.

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ANGUSTURA BARK BRAND

ASSOCIATED TO THE QUEEN



Printed by W. & A. G. Smith, 10, St. Martin's Lane, London, W.C.

1852

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FOR T. BAYNE, NEAR THE NEW GATE.

1852

TO
JOHN TURTON,

M.D. F.R.S. COLL. MED. LOND.

ET

S.R. MED. PARIS. SOC.

PHYSICIAN EXTRAORDINARY

TO THE

KING,

AND

Physician to the QUEEN;

THIS ESSAY

IS RESPECTFULLY INSCRIBED

BY HIS MUCH OBLIGED

AND MOST OBEDIENT

HUMBLE SERVANT,

A. E. BRANDE.

TO
JOHN TURTON,

M.D. F.R.S. COLL. MED. LOND.

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J. E. BRADY.

PREFACE.

DURING the two years which have elapsed since the first Edition of this Essay was published, the Angustura has been employed by many gentlemen in very extensive practice, who generally bear the most decided testimony to its merit. Its efficacy in several of the diseases, against which I had recommended it, has not only been better ascertained, but it has also been found eminently useful in Putrid Fevers, Mortifications, &c. when the failure of the more usual remedies gave occasion to a trial of this Bark.

It would be folly to expect that any medicine, especially one so lately introduced, should meet
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with

PREFACE.

with universal approbation; and though the increasing demand fully evinces, that it rises in the public opinion, yet some objections have been made to its use. The few who, from indolence or prejudice, oppose themselves to every new remedy; or those who, having expected universal powers and been perhaps foiled in a hopeless case or two, now deny every virtue to that which cannot cure all diseases, I should in vain attempt to convince: but to such as are averse to the naturalization of a stranger, whose merit they may not altogether deny, because they think the Materia Medica already too much crowded, and that the same ends may be attained by drugs of established use; to these I would beg leave to observe, that there still are but few really effectual remedies; that the very number of received Tonics argues their insufficiency; and that simplicity being a grand desideratum, the Angustura would merit attention,

PREFACE.

tention, were it only for effecting singly what before required combinations of other medicines.

This Bark, however, has further claims. From what is said in the following sheets, it may, I apprehend, be inferred, that the Peruvian Bark can perhaps alone be placed in general competition with the *Angustura*. Supposing their operation similar, the latter possesses some very material advantages; it acts in a much smaller dose, is less apt to disagree with the stomach or run off by the bowels, and, as far as our knowledge goes, is not near so liable to have its virtue impaired by age.

Considering it therefore as highly probable, that the *Angustura* must, in due time, come into general use, I have thought a short account of its first appearance and reception in this country might not be unacceptable to my readers; and am sorry to be still unable to add any thing, beyond

PREFACE.

yond mere conjecture, relative to its Natural History. The description of the Bark is followed by a series of experiments, tending to shew, in the first place, its general chemical properties and constituent parts, as also the method pursued in making the various preparations; and secondly, to ascertain its antiseptic powers. In this experimental part, I owe much to the assistance of Mr. SCHMEISSER, a very accurate chemist. The Analysis, and the experiments on the acrid matter contained in the *Angustura*, are wholly his.

With regard to the practical part of this Essay, it was at first necessary to rest principally on my own observation: but being now enabled to adduce the more weighty testimony of others, I have, in the additions, placed my chief reliance on that; though numerous instances of the efficacy of this Bark have presented themselves to me also. From the many cases before
me,

PREFACE.

me, I have endeavoured to select, or give an abstract of only the strongest and most remarkable. This has also been my rule with such as are to be found in other publications, to which those are referred, who may desire to consult them more at length. Still this Essay has grown to a larger size than I could have wished; and a Table of Contents therefore appeared useful.

The assistance I have received in this pursuit has exceeded my hopes, and demands my best thanks to all who have thus favoured me; particularly to Dr. WILLAN, Physician to the Public Dispensary, and to Mr. WILKINSON, Surgeon of Sunderland; as their valuable communications have enabled me much better to ascertain the powers of the *Angustura Bark* than I could otherwise have done. Dr. LETTSOM also will please to accept of my grateful acknowledgements for the permission to make extracts from his instructive paper on this

PREFACE.

Bark, which is to appear in the fourth Volume of the Medical Communications, and of which he kindly lent me the MS.

The publications principally consulted are two papers on the Angustura by Mr. WILKINSON, inserted in the London Medical Journal, and in the Medical Facts and Observations; and a Latin inaugural Dissertation by Dr. FILTER, defended at Jena, a German University. Dr. MEYER, at Gottingen, has also published a Dissertation on this Bark, and a German translation of the former Edition of this Essay, with additions; besides which a number of detached papers on the Angustura have appeared in various parts of Germany.

Arlington-street, March 26, 1793.

CONTENTS:

	Page
PREFACE.	
Account of the first appearance and reception of	
the Angustura,	1
Description of the Bark,	4
Suppositions relative to its Natural History,	5
Thought to be the Bark of a Magnolia,	6
of the Brucea,	7
Differs from the dried Bark of the Brucea,	8
Angustura not noticed by older writers,	10
Experiments on the Angustura,	11
Infusion, Decoction, and Tincture,	ib.
With Vitriol of Iron, Alkaline Salts, and other	
agents,	12
Not likely to answer as a dye,	ib.
Trials to cover its taste,	15
Extracts; aqueous by boiling, and spirituous,	ib.
Yields pure Resin, gummous Extract, and an	
acid greasy matter,	17
Experiments on the acid matter, and its effects	
on a dog,	ib.
Cold-water Extract,	19
Extract prepared by affusion of boiling water,	20
b 2	Distilled

CONTENTS.

	Page
Distilled water and essential oil,	21
Volatile Alkali in the Angustura,	22
Analysis of this Bark,	ib.
Products obtained from eight ounces,	24
Experiments to ascertain the antiseptic powers of	
the Angustura,	25
1. Compared with Peruvian Bark, Serpentaria,	
Chamomile flowers, and Columbo root, in	
retarding the putrefaction of meat and water,	ib.
Peruvian Bark added to the putrid standard,	26
2. The above experiments repeated with the	
addition of ox-gall,	27
Angustura added to the putrid standard,	28
3. Angustura compared with Myrrh, Columbo,	
Peruvian and Red Bark, in resisting the pu-	
trefaction of gall, and correcting it when putrid,	29
4. Again compared with Columbo root, Red	
Bark, Peruvian Bark, Serpentaria, and	
Myrrh, as an antiseptic, and corrector of	
putrefaction,	31
5. Effects of the different quantities of Angus-	
tura, and its preparations in sweetening putrid	
gall,	33
6. Effects of Red Bark and Columbo root,	34
7. Serpentaria, Angustura and Peruvian Bark,	
retard the putrefaction of serum, and correct	
it when putrid,	35
	Effect

CONTENTS.

	Page
8. Effects observed on adding Red Bark, Angustura powder, and its extracts, to putrid gall,	35
9. Putrid meat rubbed over with Angustura, Red Bark, and Peruvian Bark, in powder, and their effects,	37
Experiments to ascertain in which of the constituent parts of the Angustura, its antiseptic power resides,	ib.
Observations of others on the antiseptic power of the Angustura,	39
On the Effects of the Angustura Bark,	41
Power of the Angustura and Peruvian Bark in preventing diseases,	42
Account of the dose, &c. of the Angustura,	45
Its effects in Dysenteries,	49
Cases by the Author,	50
by Dr. Willan,	57
by Mr. Charlton,	59
and observations by Dr. Winterbottom,	60
by Mr. Wilkinson,	65
Effect in Diarrhoeas,	66
Cases by the Author,	ib.
by Dr. Halliday,	69
by Dr. Lettsom,	71
by Mr. Wilkinson,	ib.
by Dr. Collingwood,	72
Effects	

CONTENTS.

	Page
Effect in Agues,	75
Cases by the Author,	ib.
by Dr. <i>Willan</i> ,	82
by Mr. <i>T. Thomas</i> ,	ib.
by Mr. <i>Clark</i> ,	ib.
by Mr. <i>Blackman</i> ,	84
by Mr. <i>Wilkinson</i> ,	86
by Dr. <i>Filter</i> ,	88
Opinions vary as to its febrifuge powers,	89
Use in other intermitten complaints,	91
In aguish pains of the head and face,	92
Cases by the Author,	ib.
by Mr. <i>Thomas</i> ,	93
by Mr. <i>Wilkinson</i> ,	95
Effect in Fevers, Mortifications, &c.	96
Given by Dr. <i>Grieve</i> in a putrid fever,	ib.
by Dr. <i>Lettson</i> in fevers of the low, ner- vous, and putrid kinds,	97
by the Author in a mortification of the mouth,	98
by Dr. <i>Willan</i> in chronic Purpura,	103
by the same in a contagious fever,	104
Utility of its external application in a highly putrid fever by Dr. <i>Ewer</i> ,	ib.
Useful in ulcerated Sore Throats,	106
Case of low Fever by Mr. <i>Newbott</i> ,	107
Used by Mr. <i>Wilkinson</i> in Typhus, &c.	109
	Used

CONTENTS.

	Page
Used by Dr. <i>Filter</i> in malignant fevers, . . .	110
by Dr. <i>Lettsom</i> in an abscess in perinæo, . . .	ib.
by the same, in a spontaneous mortification of both feet,	111
by Dr. <i>Filter</i> in a mortified scrotum, . . .	112
Effects as a General Tonic, &c.	113
In impaired digestion from drinking, . . .	114
In Chlorosis,	ib.
Recommended as a Tonic by Dr. <i>Willan</i> , . . .	115
by Mr. <i>Glendenberg</i> ,	ib.
by Mr. <i>Wilkinson</i> ,	116
Used in Hooping-cough by the same, and by Mr. <i>Salkeld</i> ,	117
by Dr. <i>Collingwood</i> ,	119
In weakness from excessive venery by Dr. <i>Filter</i> , . . .	120
Effects as an alterative,	ib.
In Ulcers,	121
In weak and scrophulous eyes,	122
General Observations on the Angustura,	
By Dr. <i>Pearson</i> ,	123
Dr. <i>Willan</i> ,	128
Dr. <i>Withering</i> ,	ib.
Dr. <i>Lettsom</i> ,	129
the Author,	131

CONTENTS

110	by Dr. Fisher in malignant fever
110	by Dr. Fisher in an abscess in perineum
110	by the same in a spontaneous emphysema
110	of both feet
110	by Dr. Fisher in a morbid stomach
110	which was a General Tonic, &c.
110	in repeated hemorrhage from drinking
110	In Chlorosis
110	Recommended as a Tonic by Dr. W. Wilson
110	by Mr. Chamberlain
110	by Mr. W. Wilson
110	Used in Hooping-cough by the same, and
110	by Mr. Chamberlain
110	by Dr. Chamberlain
110	In weakness from excessive venery by Dr. Fisher
110	Efficient as an astringent
110	In Ulcers
110	In weak and torpidulous eyes
110	General Observations on the Angina
110	by Dr. Fisher
110	Dr. Wilson
110	Dr. Wilson
110	Dr. Fisher
110	the Author

EXPERIMENTS,

Ec. Ec. Ec.

ABOUT the middle of the year 1788, a considerable quantity of a Bark, not before known in this country, was imported from the West Indies. The first parcel (I am informed) came in the ship Niven, from Dominica, consigned to Messrs. Bourdieu and Co.; and being supposed the growth of Africa, was entered as such at the Custom-house in July 1788. Some time after another parcel was brought to Liverpool, and there likewise entered as of African growth. The only account which came with either importation was, “*that it had been found very superior to the Peruvian Bark in the cure of fevers:*”

B

“but

but of its natural history so little was said, that it had, for a considerable time, not even a name.

A twelve-month after, two Letters were published in the London Medical Journal from Dr. EWER and Dr. WILLIAMS, both of the Island of TRINIDAD, in which this Bark is well described, and a general, very favourable account given of its effects, without however mentioning the dose. It is there called CORTEX ANGUSTURÆ; and said to have its name from ANGUSTURA in South America, whence the Spaniards bring it. In the year 1790, a parcel was imported from Cadiz, and some time after another from the Havannah; which makes it probable that it grows in South America*.

* Every endeavour has been used to obtain an account of the place of its growth, &c. particularly through the gentlemen to whom the first parcel was consigned, but hitherto in vain: their supposition is, that it grows near the river Oronoko. I find *Angostura* to be merely the Spanish term for a narrow pass between mountains; and two such will be found in D'Anville's map of South America, on the Oronoko; but I apprehend, from the best information I have been able to obtain, that there exists no town or district of the name.

The

The first importation was so large, that a risk of this nature would hardly have been ventured upon, had not the drug been held in considerable esteem in those places from whence it was brought*. Here, however, the Angustura Bark met with very little notice, and a considerable quantity was re-shipped. Of the few trials which had been made with it, some were much in its favour: but yet it was thought to possess no peculiar powers; and the number of bitters, as well as general tonics in the *Materia Medica*, was already perhaps too great. I received a specimen of this Bark early in 1789, but could not procure any quantity till rather late in the year: its singular and powerful taste engaged my attention, and conceiving it to differ materially from every other bitter known to me, I thought it merited further investigation; and

* I should suppose 40,000 pounds, or upwards, were imported before 1791—Since that time various parcels have been entered at the Custom-house, to the amount of several thousand weight, chiefly from the West Indies, though some small quantity has been brought from Spain.

soon found, by taking small doses myself, that it produced at least no bad effect.

There is a considerable variety in the external appearance of the Angustura Bark, owing however, probably, only to its having been taken from trees of different sizes and ages, or from various parts of the same tree, since the taste and other properties perfectly agree. Some parcels which I have examined, consist chiefly of slips torn from branches, which could not have exceeded the thickness of a finger: these are often smooth, three feet or more in length, and rolled up into small bundles. In others the pieces have evidently been, for the greater part, taken from the trunk of a large tree, and are wrinkled, and nearly flat, with quills of all sizes intermixed. The most of what I have seen has been put into casks in the West Indies; but where the original package remains it is very curious, and formed carefully of the large leaves of a species of Palm, surrounded by a kind of net-work made of flexible sticks. I
never

never met with any insect, or any trace of one, in the quantities of this Bark which I have examined, nor does it appear to suffer by keeping.

The outer surface of the ANGUSTURA BARK, when good, is in general more or less wrinkled, and covered with a coat of a greyish white, below which it is brown, with a yellow cast: the inner surface is of a dull brownish-yellow colour. It breaks short and resinous. The smell is singular and unpleasant, but not very powerful: the taste intensely bitter, and slightly aromatic; in some degree resembling bitter almonds, but very lasting, and leaving a sense of heat and pungency in the throat. This Bark, when powdered, is not unlike the powder of Indian rhubarb. It burns pretty freely, but without any particular smell.

Of the natural history of the Angustura Bark, we continue completely ignorant: and I have in vain turned over and carefully examined many hundred weight, hoping to find
the

the fruit, or some part of the tree which produces it: I found indeed one imperfect leaf, resembling those of the *Brucea*; but from this nothing can be inferred. It has, by some German botanists, been considered as the bark of a species of *Magnolia*—probably the *Glaucia*. But the Bark, both of that and the *Grandiflora*, which I have procured and dried, differ completely from the *Angustura*.

Happening to read Mr. BRUCE's account of a Bark by which he was cured of a very obstinate and dangerous dysentery*, and which he describes as a clean, clear, wrinkled Bark, of a light brown colour; and of a plain simple bitter taste, without any thing aromatic or resinous, but leaving in the throat and palate something of roughness resembling *Ipecacuanha*; it struck me that this description, as well as what Mr. BRUCE says of its operation, agreed very nearly with the An-

* Travels to discover the Source of the Nile. Vol. V. p. 69. & sq.

gustura.

gustura. I therefore requested my much esteemed friend, the late Dr. WOIDE, to shew Mr. BRUCE this Bark, which I sent him, and to ask whether it resembled that to which he owed his recovery. The answer I received was, that he thought they were perfectly alike : they could not be compared, as his specimens had been lost. The shrub, from the root of which Mr. BRUCE's Bark was taken, is called by the Abyssinians WOOGI-NOOS, and grows abundantly in the low parts of their country. From the seeds he brought over, plants have been raised in Europe; and are now in a very vigorous state in the Royal garden at Kew; Sir JOSEPH BANKS had named it *Brucea antidysenterica*, which synonym has been changed to *ferruginea* by Monf. l'HERITIER, and under this name it will be found in the *Hortus Kewensis**.

The Bruceas at Kew, are trees of a moderate

• Dioëcia Tetrandria.

BRUCEA ferruginea.

Masc. Calyx quadriphyllus; Petala quatuor.

Fem.

derate height, perhaps 10 feet, or more, with a stem but slender in proportion. The male has a ferrugineous hue, but the female (which is well represented in Mr. BRUCE's plate) has not. These plants bore flowers for some years, but no fruit; on placing the male and female very near each other, plenty of fruit has been produced, and has ripened.

The bark of the female Brucea, especially of that part of the trunk nearest the root, has so much the appearance of the *Angustura*, that on comparing them, one of the gardeners agreed with me, they must be the same; but, alas! the taste, and particularly the smell, so little correspond, that the difference cannot, in my opinion, be accounted for from soil or climate. I have carefully dried what little of the Bark I could procure of both the male and

Fem. Calyx & Corolla uti in Masc.

Pericarpia quatuor monosperma.

Brucea — l'HERITIER Stirp. Nov. p. 19. tab. x.

Brucea antidysenterica. J. F. MILLER, Icon. tab. xxv.

African Brucea.

Native of Africa; introduced in 1775.

Flowers in April and May.

female

female Brucea: they are both, especially that of the male, bitter and somewhat pungent; but have none of the distinguishing flavour of the Angustura. This generally agrees with what is said in the Edinburgh Medical Commentaries for 1790: “ But we may
“ observe that the *Cortex Angusturæ*, as obtained from London, appears to us to be
“ essentially different, both in its appearance
“ and sensible qualities, from the dried Bark
“ of the *Brucea antidysenterica*, obtained
“ from the trees growing in the botanical
“ garden of this city, and which were raised
“ from seeds given to the late Dr. HOPE by
“ Mr. BRUCE.”

Various circumstances concur in making it probable, that the Angustura Bark is taken from the trunk and branches of the trees which produce it; though I confess myself unacquainted with any general criterion by which the Bark of the root might be particularly distinguished. Of the root of the Brucea, I have hitherto not been able to ob-

tain a specimen. The Angustura has, I find, been sent abroad by some ingenious men here, as the Bark of the *Brucea antidysenterica*.

I have looked over many of the older writers on the *Materia Medica*, thinking I might among their obsolete Barks find some one which should resemble the Angustura, but without success: so that we may suppose it has not been before seen in Europe. Yet DALE's description of the true Peruvian Bark would perhaps apply better to the Angustura than to any species of the other now in use; which can scarce be said to be of an *acrid and intensely bitter* taste*.

That there is a wide difference in Peruvian Bark, both as to appearance and virtue, is well known: but this principally arises from the great demand, which has induced the substituting the Bark of other trees for the true. Hitherto this has not, as far as I can

* *Cortex crassitie mediocri, foras scaber, paululum canescens, intus levis; coloris ferruginei; saporis aeris et intense acri.*

DALE, *Pharmacologia*, Lond. 1737, 4to. p. 291.

learn,

learn, happened with the Angustura; for the specimens which have been shewn me all agreed very nearly, though imported at different times and from different places. But I have seen some so much altered by being kept damp, as by no means to answer my description, being blackish, mouldy, and not at all friable; and a friend informs me, that he has, in the country, seen a powder sent by a London druggist under the name of Angustura, which possessed neither taste nor smell. By attending to the description I have given of the Bark in its perfect state, these adulterations must easily be detected.

EXPERIMENTS

ON THE

ANGUSTURA BARK.

IN relating my experiments on this Bark, I shall begin with those which tend to ascertain its chemical properties ; and afterwards give an account of the trials made to determine its antiseptic powers. The degrees of heat have throughout been measured by Fahrenheit's thermometer.

A cold Infusion made with half an ounce of the fine powder to sixteen ounces of water, shaking them frequently during twenty-four hours, is very bitter, and has all the peculiar flavour of the Bark.

The Decoction, prepared with half an ounce of the coarse powder and twenty-four ounces of water boiled down to sixteen ; and the Infusion, made with half an ounce to sixteen

teen ounces of boiling water, left to stand till cold, are both exceeding bitter, with a good deal of the flavour, but without the acrimony of the Bark,

One ounce of the coarse powder, digested three days with sixteen ounces of rectified, or of proof-spirit, gives a strong tincture of a deep yellow colour, impregnated with the entire taste of the Bark. Both become milky when mixed with water; that with rectified spirit most. Wine is also a good menstruum.

The addition of vitriol of iron makes no material change in the colour of this Bark, or of its preparations. Alcaline salts somewhat deepen their colour, and acids make it rather lighter. I have made numerous experiments on the Angustura Bark, with various menstrua, chiefly to learn whether it could be used as a dye; but much doubt its being applicable to this purpose. Both volatile and fixed alcalis, especially the caustic, extract a tincture of a very dark colour, between green and black. Acids, more or less diluted, act
but

but little on this Bark. The dulcified spirit of nitre appeared to be the most powerful menstruum of any; the tincture made with it being very black, and apparently very saturated. On evaporation however, the residuum of the tincture made with one hundred grains of the Bark to six drachms of dulcified spirit of nitre, weighed only thirty-two grains (of which about one-third was soluble in cold distilled water), while that of an exactly similar tincture, made with proof-spirit, weighed forty grains.

One drachm of Angustura Bark was rubbed with twenty grains of Quick-lime; one ounce of water gradually added, and the mixture boiled a few minutes in an earthen vessel, then strained. The same was done with Magnesia, with calcined Magnesia, and with Alum. This last decoction was of a bright yellow colour, and very bitter; that with magnesia was also very strong, and of a dark-brown colour. The calcined magnesia did not appear to act so powerfully, and the
quick-

quick-lime had extracted but little, the decoction having the taste of strong lime-water, with no great degree of bitterness.

The result of upwards of twenty trials made to ascertain what would best cover the taste of this Bark, was, I think, clearly in favour of Cinnamom*. Next to this I would place, in succession, Lemon-peel, Nutmegs, Cloves, Cardamoms. Twenty grains, with one drachm of Angustura Bark, were taken to one ounce of proof-spirit, and a tincture extracted by digestion in a moderate warmth.

One pound of coarsely-powdered Angustura Bark was boiled for some time in a gallon of water; and this was repeated five times. The decoctions, having stood a night, were strained through flannel, and yielded, on evaporation, six ounces, four drachms, and two scruples, of a clear brown extract; very bitter but not acrid. The fifth decoction was still of a brownish colour, but had very little

* Mr. WILKINSON has made the same observation. See Lond. Med. Journal, vol. xi. p. 333.

taste: the Bark however, though divested of its bitterness, still retained its acrimony. This residuum, carefully dried, was digested for three days in rectified spirit, to which it imparted a deep gold-colour. The tincture was poured off, and, by a second digestion with fresh spirit, another tincture was obtained of a somewhat lighter colour, which being mixed with the first, and the spirit drawn off, a little more than half an ounce of resinous matter remained. This was very nauseous, of a light-brown colour, and so acrid as to be scarce borne on the tongue. I mixed it in a gentle warmth with the watery extract, and shall call this combination the Resinous Extract.

Four ounces of Angustura Bark, having been digested in a sufficient quantity of highly-rectified spirit of wine, yielded four drachms and a half of resinous extract. The spirit, which was drawn off in a retort, had some taste of the Bark, but not so much as might have been expected. Not one fourth

of the extract was pure resin; the rest was partly gum, but chiefly a greasy acrid substance.

Eight ounces of the powdered Bark having been carefully extracted, first with rectified spirit, and afterwards with distilled water, yielded 144 grains of pure resin, 300 grains of the acrid oily matter, and 1500 grains of dry gummous extract.

The resin, when properly separated from that acrid oily substance, is neither bitter nor acrid, nor has it the peculiar flavour of the Bark; but it has every property of a common resin.

The greasy matter above mentioned, on which the acrid taste and peculiar smell of the Angustura Bark appear alone to depend, is again soluble in Alcohol, but cannot be dried so as to become friable, without decomposition. In a heat of about 200, it becomes quite fluid; but when cold is of a tough consistence, something like bird-lime, and very oily. On adding water to a solu-

D

tion

tion of this substance in rectified spirit, the mixture becomes milky, but there ensues not that separation which happens in resinous solutions.

On rubbing this acrid substance with boiling water, it communicates its taste and smell. Cold water alone has no effect on it; but if it be first rubbed with a little sugar, and afterwards with cold water, it mixes evenly, and does not readily separate. It combines with alkaline salts, with saliva, and the gastric juice, and then becomes miscible with cold water.

Its oily appearance induced me to distil it by itself, when it yielded about one-tenth of its weight of essential oil.

As it is so very pungent and acrid, I wished to know whether if given internally, by itself and in larger doses, it might possess any deleterious quality. To a middling sized dog were therefore given at first four grains; but the dose was repeated, and gradually increased, till he had been made to swallow

forty

forty grains. The smaller doses had but little effect; but the last produced a considerable degree of irritation, accompanied with some convulsive motions. The quickness of the animal's pulse was much increased, and he seemed desirous of drink. An hour after, victuals and water were offered him, which he devoured with great avidity. He now appeared quite recovered, and continued well*.

Four ounces of the fine powder of Angustura Bark were infused three days in sixty-four ounces of cold water, and often shaken. This was repeated, and the second infusion had also acquired a considerable degree of taste and colour. Having been filtered, they were evaporated to dryness in a very gentle warmth, and yielded six drachms and two scruples of a leafy extract, like (what has been called) the

* The singular properties of this acrid matter certainly merit further attention; and Mr. SCHMEISSER proposes to continue his investigation, and give a more detailed analysis of it in another place.

Essential Salt of Peruvian Bark. This cold-water extract retains the full flavour of the *Angustura*, and is a powerful bitter, without much acrimony. The experiment was repeated, with this variation, that after the infusions had been evaporated to the consistence of a thick syrup, the hot extract was poured into cold distilled water, by which means what resinous particles it might contain were precipitated. The filtered mixture was now again very carefully evaporated, and the extract obtained, weighed only five drachms and a half; both were of a transparent brown colour, the latter most so, and formed the clearest solution with water.

The quantity of extract obtained by the following method is somewhat less than by boiling, but it appears altogether the best: Four ounces of powdered *Angustura* Bark were put into a flannel bag of a conical shape; a sufficiency of boiling water was then poured upon it, and this repeated till the filtering liquor had but little taste or colour.

On

On evaporation by a gentle heat, there remained thirteen drachms and one scruple of an extract, possessing the full flavour of the Bark, and which contained two drachms of resinous matter.

Half a pound of bruised Angustura Bark was put into a still with a gallon of water, and two quarts drawn off. This distilled water has a very singular flavour, perhaps something like strong parsley-water. A white essential oil swam on the surface, but in too small a quantity for separation or ascertaining its weight. I have since distilled six pounds of the Bark, which yielded $5\frac{1}{2}$ drachms of essential oil. This having been purified by a second distillation, was of a very light yellow colour, and mild to the taste, leaving however some glow in the mouth, accompanied with the flavour of the Bark. Its specific gravity is to that of distilled water as 933 to 1000. It is volatile in a heat of about 220 degrees. If the distillation be performed with less care, the oil remains

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impregnated with a small proportion of the acrid matter resident in the Bark, which renders its taste much stronger, and somewhat approaching to that of camphire.

On rubbing the Angustura with fixed alkali and with quick-lime in some of the preceding experiments, a strong smell of volatile alkali had been perceived, which was not the case when Peruvian Bark was treated in the same manner. To ascertain its existence, one ounce of powdered Angustura was rubbed with some fixed alkaline salt, and a little proof-spirit having been added, they were put into a small retort, and a proper heat applied. The spirit which distilled, not only gave undoubted proofs of containing volatile alkali, but there were also some small chrySTALLIZATIONS of it in the neck of the retort.

One ounce of powdered Angustura Bark was placed over a lamp, in a small retort, with an apparatus annexed for collecting the æriform and other fluids which might be

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expelled from it. By a heat of nearly two hundred degrees, about ten drops of a light-coloured oil, mixed with some aqueous fluid, came over; but this was, on increasing the heat, soon succeeded by, and (as the apparatus could not be moved) mixed with, a brown empyreumatic oil, which it was afterwards impossible to separate. The air produced was about ten cubic inches; of which some was inflammable, the greater part however fixed air. The residuum, now of a brown colour, was burnt in a crucible, and the ashes were found to contain, vitriolated-tartar, sal digestivum, mineral and vegetable alkali, calcareous earth, argillaceous earth, and iron.

By a gradual evaporation of the infusion of Angustura in distilled water, and successive crystallizations, there were obtained from it the following salts: Selenite, vegetable alkali combined with the vitriolic, the muriatic and the vegetable acid, and vegetable acid in a free state.

These analytic experiments have, since the
first

first edition of this essay, been repeated on a larger scale, and with more precision. The following table exhibits the result, and at one view the contents of eight ounces of the Angustura Bark. The moisture and the phlogiston (or whatever it may be called) are not noticed in it; and it will easily be understood that all these products have not been obtained from the same eight ounces of Bark, as all the soluble salts are contained in the extracts, &c.

Eight ounces yielded

Of Essential Oil,	26 grains
Gummous Extract,	1500
Pure Resin,	144
Acrid Matter,	300
Vitriolated Tartar,	48
Digestive Salt,	24
Salited Lime,	80
Selenite of Vegetable Acid and	
Lime,	180
Magnesia,	36
Argillaceous Earth,	7

Of

Of Vegetable Acid,	104 grains
Calx of Iron,	6
Volatile Alkali, about . . .	32
Pure Coal,	284
Fixed Air,	about 80 cubic inches,

Several German chymists have also made experiments on the Angustura Bark, particularly Mr. HOYER, an eminent apothecary at Brunswick. These, as far as they go, very nearly agree with mine.

The subsequent experiments were made to ascertain

THE COMPARATIVE POWERS OF THE
ANGUSTURA BARK IN RESISTING OR
CORRECTING PUTREFACTION.

I. One drachm of powdered Angustura was well rubbed with a little warm water, then strained off, and water enough added to make the whole two ounces. Into these I put two drachms of fresh lean beef, cut into small bits. The same was done with Peruvian Bark, Serpentina, Chamomile-flowers, and Columbo-root; and one phial had beef and water only

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to

to serve as a standard. The phials were put into a tin vessel with a cover, and, by means of a lamp, kept, during the whole of all the experiments, in a degree of warmth about equal to ninety-eight. After seven hours every thing was sweet, and night intervening the phials were not again examined till at the expiration of seventeen hours. The contents of the standard phial were now become very offensive, and so was that with the Columbo infusion; all the others continued fresh. After twenty hours the Chamomile infusion had also become somewhat offensive, the Columbo very much so: the Angustura, Peruvian Bark, and Snake Root, continued so nearly fresh as to have their own natural smell predominate. To the standard, now become very putrid, was added one drachm of powdered Peruvian Bark; much of the offensive smell went off very soon, and in the course of an hour, more: yet after four hours it had again become very bad. The Columbo infusion now continued very offensive; the Chamomile

mile was perhaps somewhat mended. In the three others little change. Thirty hours:— The Columbo exceeding putrid, and the meat in it swimming. The Serpentaria, very little smell; yet the meat dissolved into mucus. The others remained as they were; the meat in all sinking and solid. Forty-eight hours:— The Angustura, and Peruvian Bark, and Serpentaria, smelt very little: the Chamomile was less offensive than before, and rather acidulous: the standard very bad: the Columbo continued highly putrid, and was thrown away. At the end of seventy-six hours the experiment was concluded, every thing continuing nearly in the same state: the Angustura was very little changed; the Peruvian Bark and Serpentaria something more; the Chamomile had become more acidulous.

II. The same ingredients were used, with the addition of half an ounce of fresh ox-gall to each phial. After seventeen hours the standard was more offensive than in the

first experiment ; the Columbo smelt considerably ; the Chamomile had also an offensive smell, and the Peruvain Bark a little ; the Angustura and Snake-root continued perfectly sweet. After twenty hours this smelt a little ; the Angustura not : the others not much altered, only the Columbo rather worse. Into the standard phial, the contents of which were now become very putrid, was put one drachm. of powdered Angustura Bark : the foetor was immediately much diminished, and after one hour but slight ; five hours after the addition, the mixture continued to mend, and in four hours more the smell of the Angustura only could be perceived. Thirty hours :—The Columbo very putrid, the meat floating ; the Chamomile also offensive, and the meat rising ; the Peruvian Bark and Serpentina smelt a little, but the meat continued at the bottom, and nearly solid. In the Angustura it was quite so, with scarce any offensive smell ; at the expiration of forty hours, however, this smelt rather more than
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the Peruvian Bark. The Columbo was perhaps better than when last examined, but still much worse than either. The Serpentaria also had some smell, and the meat, though not rising, was falling to pieces. The Chamomile offensive, but becoming rather acidulous, less however than in the first experiment. The standard had very little smell, much less than that which was, in the preceding experiment, corrected by Peruvian Bark; and continued nearly the same to the conclusion of the experiment, after seventy-six hours; when the Angustura was perhaps somewhat more offensive than the Peruvian Bark. The others had changed but little since the last examination.

III, Ten phials were filled each with two drachms of fresh ox-gall, and one ounce of water. To five were added the following drugs finely powdered, of each twenty grains: *viz.* Myrrh, Columbo, Peruvian Bark, Red Bark, and Angustura; and five were left without any addition, as standards, and for future use.

After

After about thirty hours, these began to be offensive, and the Columbo nearly as soon. Thirty-six hours:—Standards smell considerably; Columbo next, then Red Bark: the Peruvian Bark not quite sweet; the Myrrh and Angustura perfectly so. Every thing continued much the same after forty-two hours. To the phials with gall and water only, which were now become very offensive, I put ten grains of the powders mentioned above, and having stood two hours, the two to which Myrrh, and to which Angustura had been added, were become perfectly sweet. The Peruvian Bark had also nearly taken off the foetor; but those to which Columbo Root and Red Bark had been put, were still considerably offensive. No remarkable alteration took place during the remainder of the experiment in the five first phials; excepting that the contents of that with the Angustura, which had in a few hours assumed a very deep green colour, bordering on black, again became much lighter. The same thing happened, though in
a less

a less degree, in the following experiment. At the conclusion, after three days and nights, the Angustura deviated little or nothing from its natural smell, Myrrh a little; the other three were much alike offensive. Of the meliorated phials, the Angustura continued perfectly sweet, the Myrrh smelt a little, the next in order was Peruvian Bark, then Red Bark, and lastly Columbo, which was particularly bad.

IV. Thinking it might be owing to accidental circumstances that the Columbo Root, and particularly the Red Bark, shewed so little antiseptic power, though the drugs were all the best I could purchase, and had not been long powdered, I selected with particular care a piece of each of the following: *viz.* Columbo Root, Red Bark, Peruvian Bark, Serpentaria, Myrrh, and Angustura. Having reduced them to a fine powder, ten grains of each were added to six phials containing two drachms of fresh ox-gall, and one ounce of water. The gall happened to be very thin, and of a lighter colour

colour than usual. Three phials were left with gall and water only for standards. These continued nearly unaltered after twenty-four hours, but the Columbo had become foetid; those with the other ingredients remained perfectly sweet. The standards became gradually more offensive; but two of them continued fresh much longer than the other, though the mixture as well as the warmth were perfectly the same in all: a proof of the necessity of repeating experiments. After forty-eight hours they were putrid, but not so offensive as the phial with the addition of Columbo Root: the others continued fresh. After sixty hours the Myrrh smelt a little, the Serpentaria rather more: the Peruvian Bark had some trifling smell, but the Red Bark and Angustura retained their natural smell. To two of the offensive standard phials were now added—to one, five grains of Angustura, to the other, five grains of Red Bark. This soon became nearly sweet, the Angustura perfectly so, and thus continued to the end of the experiment;

periment; which was also concluded after seventy-six hours, when every thing else remained much in the same state.

V. Part of the gall of the last experiment had been left, and being now placed in the lamp-furnace, during one night, it became exceeding putrid. Half an ounce of this was diluted with as much water, and to one such mixture were added five grains of Angustura powder; to a second, eight grains; to a third, ten; to a fourth, two grains of the Cold-water Extract of Angustura; and to a fifth, half an ounce of its Decoction. The smell was immediately changed in all, and approached nearer to that of liver of sulphur, though not much diminished in strength. The phials were kept in a blood-warmth, and had, after less than an hour, all lost their foetor; only that with five grains smelt not quite so fresh as the others. After five hours, all continued sweet. At the expiration of twenty-four hours, the phials with five grains, with the Cold-water Extract, and with the

F Decoction,

Decoction, had again contracted a considerable degree of putrescence, those with eight and with ten grains of the powder continued perfectly sweet.

VI. To half an ounce of the same most putrid gall, and as much water, were added five grains of powdered Red Bark; and to another phial, ten grains of powdered Columbo Root. This at first diminished the fœtor considerably; but after about four hours, the mixture had become, if possible, more offensive than before the addition. After twenty-four hours, however, a change had again taken place, and it was now tolerably sweet. The Red Bark soon corrected the fœtor, and remained perfectly fresh to the end of the experiment, which was continued twenty-four hours; thus shewing itself, in this instance, more powerfully antiseptic than the Angustura, of which it has been seen, in the preceding experiment, that though five grains took off the fœtor of half an ounce of gall, they were yet not sufficient to preserve it fresh.

fresh. But I must remark, that a singularly fine quill of Red Bark had been selected and powdered for the experiment; such as it would scarce be possible at present to purchase one pound of at any price.

VII. To three half ounces of fresh serum of human blood, were added five grains of *Serpentaria*, of *Angustura*, and of *Peruvian Bark*. The *Serpentaria* became offensive first, the two others resisted the putrefaction several hours longer, and hitherto were equal; yet after forty-eight hours, the phial with *Angustura* had become more offensive than that with *Peruvian Bark*. I now added five grains more of each ingredient; and, in sweetening the offensive mixtures, the *Angustura* had the preference.

VIII. To half an ounce of ox-gall, in a state of the highest putrefaction, were, without any other addition, put five grains of powdered Red Bark (not selected): to a second phial, five grains of *Angustura* pow-

der; to a third, as much of the Cold-water Extract; and to a fourth, of the Resinous Extract. After being kept in a blood-warmth four hours, the powders of the Angustura, and of the Red Bark, had nearly taken off the foetor, and the mixture had now rather an empyreumatic smell. That with the Aqueous Extract still continued somewhat offensive, with the Resinous Extract more so. I now added five grains of each ingredient to every phial; yet, after four hours, there was no material change. Apprehending therefore that the gall alone might not sufficiently dissolve the active part of all the correctives, I diluted the contents of each phial with two drachms of distilled water. The foetor soon after went completely off from all, excepting the phial with the Resinous Extract, which continued to smell a little, and which was the most offensive at the end of twenty-four hours. The others continued nearly equal; but, on adding the water, the correction was brought

brought about first in the phial with the Cold-water Extract; and, secondly, in that with the Angustura powder.

IX. Three pieces of meat, which had been kept moist and warm till quite putrid, were rubbed over, one with Angustura, the second with Red Bark, and the third with Peruvian Bark, all in fine powder. The Angustura immediately took off much of the fœtor, the two others very little. They were left some hours in a slight warmth, suspended over water, so that the vapour might keep them moist. After about four hours the piece with the Angustura had been rendered tolerably sweet: the two others were mended, but still much more offensive.

To ascertain in which of the constituent parts of the Angustura Bark, its remarkable antiseptic power might particularly reside, Mr. SCHMEISSER made the following experiments.

Eight phials, numbered, were placed in the apparatus used for the former experiments,

ments, and the same warmth given. Each phial contained half an ounce of fresh Ox-gall diluted with water.

To No. 1. were added 50 grains of powdered Angustura Bark.

2. as much of its pure Resin as 50 grains contain.

3. as much of the acrid substance as is in 50 grains.

4. as much of the cold-water Extract as 50 grains yield.

5. the same proportion of the Extract prepared with boiling water.

6. as much of the Resin and acrid matter mixed.

7. as much pure Resin as is contained in 200 grains.

8. remained unmixed--for a standard.

This standard, No. 2. and No. 7. became offensive almost at the same time. No. 4. began to corrupt next; afterwards No. 3. and No. 6. equally: then No. 1.; and lastly, No. 5.

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The experiment was repeated with Blood, and with Gastric Juice ; when the result corresponded with the above.

It would hence appear, that the pure resin, not being soluble, has no antiseptic power at all ; and that the acrid matter, combined with the gummous and saline particles in the extract prepared with boiling water, resists putrefaction the most ; so that this Extract must be considered as the best preparation for internal use.

Mr. HEYER, at Brunswick, also found the Angustura possessed of considerable antiseptic powers, rather superior to those of the Peruvian Bark, &c. Dr. FILTER says, the decoction of Angustura did not resist putrefaction so long as that of Peruvian Bark, Winter's Bark, Arnica, and others. But having rubbed the powder of Angustura, of Peruvian Bark, Arnica root, and Camomile flowers on pieces of meat, leaving one as a standard, and placing them in a moderate warmth ; he found the standard shewing
strong

strong signs of putrefaction on the third day : those with Peruvian Bark and with Arnica began to change towards the end of the fourth ; while those with Angustura and Camomile held out till the fifth*.

Without a very frequent and careful repetition of experiments, it is impossible to decide, with absolute precision, on the comparative antiseptic powers of various substances ; since much may depend on circumstances which cannot be ascertained : add, that it is a matter of considerable difficulty to determine the different degrees of fœtor, where the variation is not great. Yet, after making every allowance, it may, I think, safely be inferred from the above experiments, collectively taken, that the Angustura Bark is fully equal, and perhaps superior, to the other very powerful antiseptics with which I have compared it, in resisting and in correcting putrefaction.

* *Diff. de Cortice Angusturæ*—Jenæ 1791, p. 13.

OBSERVATIONS

ON THE EFFECTS OF THE

ANGUSTURA BARK.

I SHALL now proceed to point out the diseases in which the Angustura Bark has been given with advantage. The chief, which I shall treat of under their respective heads, are Dysenteries and Diarrhœas; Agues and other intermittent complaints; Fevers of the low and putrid kinds; and Mortifications. To these I shall subjoin some account of its virtues as a general Tonic, and a few miscellaneous observations. In many instances this Bark has afforded a relief so sudden, as to be scarce accounted for*: perhaps, however, its power of correcting the putrescent state of the humours may assist us in explaining this effect. Like

* This is also noticed by Mr. WILKINSON. See Lond. Med. Journ. vol. xi. p. 337. and by others.

all tonics, it will scarce agree while there exists a tendency to inflammation; nor indeed has it answered when I have given it in hectic intermittents, or the colliquative diarrhœas attendant on pulmonary consumption. Where, on the contrary, the circulation was too languid, it has, as far as my observation goes, scarce failed of proving serviceable.

Here I must beg leave to notice a salutary effect, which I have repeatedly observed both from the Peruvian and the Angustura Bark, in preventing, or, more strictly, destroying certain diseases before they were fully formed. Having myself repeatedly, and very severely, suffered from aguish pains in the teeth and face, which were attended with a considerable degree of fever, and would, like other periodic complaints, only yield to Bark after a tolerable intermission had been brought about by other means; I observed that the attack always began with the pain, of which the approach would sometimes be very gradual,

dual, sometimes it would seize me with sudden violence. After a while, shiverings and other symptoms of fever infallibly joined themselves to it, which appeared to be chiefly the effect of irritation; for at the beginning of the pain I was perhaps, in other respects, in perfect health. Considering it as probable, that the Bark might prove equally efficacious, if taken before the first feverish attack, as if taken during an intermission, I swallowed about one drachm of powdered Peruvian Bark as soon as I felt the first approach of the pain. The experiment answered beyond my expectation; for the fever was not only prevented, but the pain also vanished almost instantaneously: and I have now, for some years, never failed in warding off the attack by the same proceeding, which must however be resorted to in time, or it will not succeed. Accident induced me to substitute the Angustura Bark, and finding fifteen or twenty grains of this answer as well as sixty of the Peruvian, and sit easier on my sto-

mach, I have kept to it; and, whatever cause it may be owing to, have, since I take this, been assuredly much less subject to the disorder than while I used the Peruvian Bark. The same method has succeeded with many of my friends to whom I have recommended it,

Encouraged by this success, I have repeatedly removed incipient rheumatic pains, and sore throats, in the same manner: the latter, even when the disease was so far formed, that I scarce expected to succeed.—My servant, a man upwards of thirty, was seized with a fulness in the throat about five o'clock in the afternoon, and having been with a person very ill of a fore-throat, he was greatly alarmed. It was about nine when he asked my advice. The glands were now much swelled, and he could not swallow without considerable difficulty and pain. There was no appearance of ulceration, and his pulse and tongue were nearly in a natural state. I gave him one drachm of Peruvian Bark in a glass
of

of red port-wine, and repeated the dose after half an hour. He soon found considerable relief, was quite well the next morning, and has continued so.

Many incipient diseases are known to yield frequently to evacuants: and an emetic, or a brisk purge, will sometimes cure an ague. It would therefore appear, that some disorders may at a certain period be removed by correcting the offending matter within the body, as well as by carrying it off; and I think I have more than once prevented a serious attack of fever, by giving a dose or two of Peruvian or of Angustura Bark on the very first appearance of the febrile symptoms.

Some preliminary account of the dose, and manner of exhibiting the Angustura Bark, will prevent repetition in the sequel. Much larger doses than what I shall mention have been given; but though this may be done with safety, yet I doubt whether they agree, or even in general act so well. In moderate doses, this Bark sits easy
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on the stomach, and gives rather a sense of agreeable warmth; and though, in delicate habits, twenty grains may in a few instances have occasioned some nausea, or tended, as I am told, to purge; yet, in general, it has been observed by many of my friends in very extensive practice, as well as by myself, that it is much less apt to disorder the stomach and bowels than the Peruvian Bark; or to give that sense of weight and fulness which the larger doses of this frequently produce. It has been asserted, that the Angustura is very heating; to me it has appeared less so than the Peruvian Bark, or most other active tonics. However, to ascertain the point more nearly, I took, about ten in the evening, when the stomach would be almost empty, fifteen grains of the powder in a little water. My pulse beat seventy-six in a minute. I continued writing. After half an hour there was no material change either in the fulness or frequency of my pulse (it might beat three or four strokes less in a minute),

nute), nor was I otherwise affected. A narcotic quality has also been ascribed to this Bark *, but I confess I have never perceived any such effect from it, though I have taken a good deal.

Of the powder I have given up to twenty grains every three hours; generally, however, less. It appears rather to lose by keeping; except it be secured from the access of air.

The Infusion is made with half an ounce of the bruised Bark to a pint of boiling water. The Decoction of the same strength, with twenty-four ounces of water, boiled away to sixteen. By the Angustura mixture I mean seven ounces of the Decoction or Infusion, with half an ounce of Syrup of Orange-peel, and two drachms of compound Spirit of Lavender: the dose, one ounce to one and an half. Latterly I have generally given one ounce, or ten drachms, of the Decoction, with one drachm of Syrup, and as

* See Critical Review for June 1791.

much

much Tincture of Cinnamon, or Compound Tincture of Cardamoms.

Of the Tincture, prepared with one ounce of Angustura Bark to sixteen of Proof-spirit, my dose is about one drachm. The following will be found a not inelegant compound Tincture :

R Cort. Angust. contus ʒj.

— Cinnamon. ʒij.

Croci ʒj.

Spir. Vin. Gallic. ʒxviij.

Stent, sine calore, per dies sex, vas subinde agitando : dein fortiter exprime & filtra tincturam.

Of the Aqueous Extract I consider ten grains as a full dose ; and of the Resinous, six grains. Of late I have only used that prepared by the affusion of boiling water (p. 20) which I give up to eight grains.

To young children I have frequently given this Bark and its preparations, in adequate doses ; and with very good effect.

I have occasionally combined it with acids, with alkaline and neutral salts, with magnesia, testaceous medicines, and chalybeates ; rarely, except to cover the taste, with aromatics.

EFFECT

EFFECTS OF THE ANGUSTURA BARK IN
DYSENTERIES AND DIARRHŒAS.

THE true Dysentery occurs not often in London; and the sporadic disease, in which alone I can speak to the effects of the Angustura, perhaps differs materially from the epidemic. I have sent some of this Bark to various parts of the Continent, hoping to obtain information of its effects as an anti-dysenteric, from trials made either in camps, or in places where the disease occasionally rages as a fatal epidemic; but hitherto I have not succeeded in getting any account whatever, owing perhaps to my applications having been made to almost entire strangers. Dr. EWER however says, that it has been of great service against the Dysentery in the Island of Trinidad, where the disease is both frequent and fatal*: and in some of the German publications, it is, in general terms, said to have been serviceable in epidemic dysenteries.

* Lond. Med. Journal, vol. x. p. 157 and 159.

In Dysenteries, and generally in Diarrhœas also, it will be best to premise a moderate saline laxative, or, as occasion may require, an emetic. After the operation, I give one ounce and an half of the Angustura mixture every three, four, or six hours; generally alone: but where there has been some feverish heat, I have added half an ounce of saline mixture to each dose; or where acidity in the stomach was complained of, ten to twenty grains of testaceous powder. I have very rarely had occasion to combine opiates with this medicine. It has appeared to me, that the decoction or infusion rather act better in bowel-complaints than the powder.

The first case of Dysentery, in which I had an opportunity of trying the Angustura Bark, occurred in October 1789.—A woman turned of forty, and of a bad habit of body, was seized with a severe Dysentery. As she had been under my care the preceding autumn for the same complaint, which had then given me much trouble, and left her very weak, I
had

had advised her, in case of any return, immediately to take some laxative medicine, instead of again having recourse to astringents. She had therefore now taken three doses of Glauber's salts before I saw her, from which she received indeed some temporary relief, but still every dysenteric symptom continued with considerable violence. She chiefly complained of the tenesmus and pain; but there was no fever, and the tongue was tolerably clean. I gave her ten drachms of the Angustura mixture (prepared with only one drachm of the Bark, infused in eight ounces of water), and three drops of laudanum; to be repeated every two or three hours. This was about noon. Before night every bad symptom had nearly disappeared; she passed it well, and had in the morning only one stool, which was copious and good: she felt some return of appetite, and no longer complained of either forcing or pain. I now omitted the opium, and directed one ounce and an half of the mixture to be taken four times a day. She

continued well two days; but on the third morning, without any apparent cause, had in so far a return of her ailment, that the stools again became frequent, small and forcing, with aching internal pain, but without blood. Fifteen grains of rhubarb and two grains of calomel were given, which operated but once. The mixture, without opium (now prepared with one drachm and an half of the Bark), was continued every three or four hours, and again very soon relieved every symptom: after a few days, I gave her a somewhat stronger laxative. She took no other medicine, and has hitherto continued free from every complaint of the kind.

Much about the same time, another woman, aged thirty, was attacked with a Dysentery, attended with severe pain in the abdomen, and some fever. The pulse was moderate, but the tongue very foul; she loathed all food, had a violent head-ach, and was exceeding restless. I gave her one ounce of saline mixture, with two grains of Pulv. Antimon.

Antimon. Lond. every three hours. Before the next morning this had operated freely by vomit, and much yellow bile had been discharged. She had also had a purging stool or two, and perspired a little. The feverish symptoms were nearly gone, but a severe aching pain over the whole abdomen remained, together with tenesmus and frequent bloody stools. Encouraged by its effect in the preceding case, I gave her the Angustura mixture (also prepared with one drachm) alone, and being rather apprehensive of a return of fever, directed a dose to be taken every four hours only. When I saw her in the evening, she had taken it three or four times, and every dysenteric symptom was much abated. She passed a good and quiet night, taking her mixture occasionally, and thought herself nearly well in the morning, in the course of which she had a natural stool. She continued the same medicine during the day, and eat some light food with a tolerable stomach; her drink was very weak beef-tea,
taken

taken freely. On the following morning she had a relapse, having again had two or three forcing stools, with some blood and a good deal of pain. A gentle laxative, however, with fenna and castor oil, and a continuance of the Angustura mixture (now prepared with one drachm and a half), in two or three days restored her to perfect health.—This patient, a very sensible and observing woman, repeatedly told me, that she felt almost instantaneous relief from every dose of the medicine.

The third case was a girl about six years old, who had very lately recovered from the measles, during the whole of which she had been gently purged; and she had taken two doses of physick since the disorder, the last only a day or two before the flux appeared. She complained of much pain, the stools were small, frequent, and bloody, with constant forcing. There was no fever, and the tongue furred but little. Without premising any evacuant, I gave her one table-spoonful of Angustura mixture (made with one drachm

to six ounces of water) every two or three hours. This abated the pain, and the blood disappeared; but finding the next morning that the stools continued green and mucous, I gave her a laxative medicine, from which she had four copious stools, and afterwards continued the Angustura mixture. By the following day she was nearly well, no pain nor other dysenteric symptom remaining: the laxative was repeated the succeeding morning, and she has continued well.

A middle-aged married woman was, while under a gentle course of mercurial medicines, seized with a Diarrhœa, to which were soon joined symptoms of Dysentery. The stools were now innumerable, very mucous, small, and, at last, very bloody. She was in extreme pain, and had a continual tenesmus; at the same time she complained much of wind and acidity at her stomach. I directed her to drink plentifully of very weak broth; and to take two large table-spoonfuls of the following

ing mixture, every two, three, or four hours, as the symptoms might require :

R Decoct. Angust. ℥vij. Tinct. Cinnamomi. Syr. Cort. aurant. aa ℥ss. Test Ostreor. præp. 3j. M.

She told me, that the very first dose had relieved and comforted her exceedingly ; and that the second nearly cured her. During the subsequent twenty-four hours, she had only three stools, copious, and without blood, but one very green. The pain and tenesmus were also gone. On the third day she was quite well, and her appetite, and health in general, much better than before the attack. As she was obliged to leave town, I gave her some soluble tartar, and advised her to take, as soon as she could, enough to purge her two or three times ; and as circumstances would make a farther use of mercurials necessary, I gave her some powders, with twelve grains of Angustura Bark in each, to be taken occasionally, if her bowels should be disordered.—

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Not having heard from her since, I suppose she has continued well.

Dr. WILLAN, to whom I am indebted for various observations on the effects of this Bark, has favoured me with the following cases :

“ G. S. a labouring man, aged forty, had been subject to a Diarrhœa upwards of three months. He had from eight to twelve stools every day. The discharge was mucous and frothy, and not considerable in quantity. It was always attended with much pain ; at other times he had frequent gripings and tenesmus.

“ At the latter part of the period mentioned the stools were usually tinged with blood ; he got very little rest, and was very much reduced by the complaint so long continued.

“ Laxatives, Opiates, small doses of Ipecacuanha, &c. were prescribed him with little advantage.

“ I then ordered half a scruple of the *Cortex Angusturæ* to be taken three times a
I day.

day. The quantity of powder was by degrees increased to a scruple, which dose produced no nausea.

“ The frequency of the discharges, the pain, and the tenesmus, gradually abated under this use of the medicine; and at the end of three weeks he was perfectly recovered.”

“ John Walter, a seaman, had been ill of a true Dysentery six months or more, and been discharged as incurable from an hospital. He was considerably emaciated, had violent pain, gripings, and tenesmus, and from twelve to twenty bloody and mucous stools in the day. Ipecacuanha, Opium, Peruvian Bark, and various other medicines, had been given without any advantage.

“ He began on the 4th of February to take twenty grains of *Pulv. C. Angusturæ*, three times a-day, and at the end of a fortnight was considerably relieved. After the third week no dysenteric symptoms remained, except a slight streak of blood now and then

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in the stools. He daily recovers health and strength."

Mr. CHARLTON, Surgeon to His Royal Highness the Duke of Gloucester, has kindly communicated the next case; where, as well as in the preceding, the Angustura removed the disease after a variety of other, reputed efficacious, medicines had been given in vain.

"I WAS called to a boy about eleven years of age, who had been ill of a Dyfentery about ten days. He had during this time been attended by a gentleman who had treated him very properly, but without any material good effect. When I saw him he had a quick pulse and white tongue, with loss of appetite. The abdomen was tense and hot, and he complained of great pain all over it, which was considerably increased just before his stools; these were mucous and very bloody, with tenesmus.

"After he had been under my care about nine days the fever and tumefaction of the
I 2 belly

belly had subsided, but the stools continued unaltered, and too frequent. I now gave him the Columbo-root, scarce doubting but it would effect a cure, as I had repeatedly found it succeed in the Dyfentery which raged among our troops at the siege of the Havannah, when all other medicines had proved ineffectual. In this case, however, it disappointed my expectations, and my patient continued much in the same state.

“ My friend Mr. Brande having mentioned the Angustura to me, I determined to try it, and, beginning cautiously, gave at first only four grains of the powder for a dose. As this agreed, and sat easy on the stomach, I gradually increased it to ten grains twice a-day. The stools now became excrementitious. I added two grains more to each dose, and after six days my patient was completely cured.”

The following case, and observations on the Angustura, by Dr. WINTERBOTTOM,
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Physician to the Settlement at Sierra Leone in Africa, were communicated to Dr. WILLAN, who has favoured me with them.

“ Mrs. P. aged 50, of a corpulent and bloated habit, had been for many years subject to fits of dyspnoea and palpitations of the heart, which in general continued but a short time, and were never very alarming. On the 20th of October 1791, she had a sudden and violent attack of these complaints: I found her lying on the bed in a very distressful situation; her breathing was very anxious and laborious, her pulse small, and frequently intermitting, her face deadly pale and covered with a cold sweat, her eyes fixed, her extremities quite cold. As she appeared to be almost in a dying state, I had little hopes of affording her any relief: however, hot bricks, wrapped in flannels, were applied to her hands and feet, and some warm gin and water was given to her frequently, by which means the symptoms gradually abated, so that the next day she complained only of a slight

slight difficulty of respiration. Having been very costive for some time before, she was ordered to take a solution of Epsom Salts at certain intervals. By mistake, the whole mixture, containing an ounce of the salt, was taken at once, which very much disordered her bowels, and finally brought on a great discharge of blood with severe tormina and tenesmus. Being obliged to go to London, I did not see her again till two months afterwards: during that time various medicines had been prescribed for her with little success. Opium, in substance or solution, abated the severity of the griping for a short time, but did not in the least diminish the purging: astringents, such as the G. Kino, Catechu, decoction of Oak-bark, Chalk-julep, Mucilage of Gum-arabic, &c. were employed with no better effect.

“ At my return from London, I found her growing daily worse. The tormina and tenesmus scarcely allowed her any respite, and became particularly violent after eating;

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the stools were frequent, though small in quantity, and chiefly composed of blood and mucus; her strength was much impaired; her countenance appeared fallow and dejected; she had night-sweats, and a severe pain in her back, which prevented her from standing upright. Under these circumstances I determined to try the effects of the Angustura Bark, and ordered half a drachm of the powder to be taken three times a day; when on the second day its utility was visible from an abatement of the diarrhœa, and from a total cessation of the pains. The medicine being disagreeable to her, she was with difficulty persuaded to take it as often as seemed necessary; however, in a few days more the purging entirely ceased. Nevertheless some blood was still discharged, but without griping or tenesmus; her appetite became much better; the pain in her back, and the night-sweats, left her, and she recovered her strength. Considering the discharge of blood as an hæmorrhoidal affection, I wished to employ a
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medicine which might obviate costiveness, and by its stimulus give a degree of tone to the hæmorrhoidal vessels: with this intent I prescribed a moderate dose of the *Potio Copaibæ Ph. Ed.* night and morning, which produced two stools in the course of the day without any griping; her bowels then became regular, the discharge of blood ceasing, and she remained without any complaint, except the palpitation of the heart: this symptom still occurs at intervals, but without any material inconvenience.

“ I have in many instances given the Angustura Bark, in decoction and in powder, with the best effects; it is in general preferred by patients to Peruvian Bark, and sits easier on the stomach. I never found any disadvantage from its use, except that of inducing costiveness, which may easily be obviated by attention. In a very obstinate intermitting Head-ach, in which Peruvian Bark given alone, and together with the Mineral Solution, as recommended by Dr.

FOWELER,

FOWELER, had been employed without success, the patient was cured by powder of Angustura Bark, taken to the amount of one ounce and an half in twenty-four hours : it was continued in this dose for the space of ten days, and then gradually diminished.

So far as I have been able to judge from many trials, the Angustura Bark possesses every advantage which may be expected from the Peruvian Bark. To persons debilitated by drinking, it is more palatable, and does not seem to load the stomach so much. In cases of *Leucorrhœa*, I have also used it with much advantage.

I have lately received a letter from Mr. WILKINSON, of which the following is a part :—In the month of September last I used the Angustura decoction in two cases of dysentery, accompanied with fever, loss of appetite, severe gripes, and mucous, bloody discharges. Both patients had laboured under this complaint at least three weeks or a month, and had taken various medicines. After premising mild laxatives, a strong In-

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fusion

fusion of the Angustura was given in doses of two to three table-spoonfuls, with two or three drops of Tinct. Cæpii, at first three or four times, and afterwards only twice a-day. They both recovered within ten or twelve days."

In a paper on the Angustura Bark, by the same, in the *Medical Facts and Observations**, he gives one case of true dysentery where it also succeeded.

In DIARRHOEAS both recent and chronic, even when accompanied with some dysenteric symptoms, I have very often given the Angustura, and with the best success. A gentle laxative was commonly premised, and repeated when the flux had ceased. I shall beg leave to mention a few cases, as attended with singular circumstances.

A Nobleman's Servant, aged about 30, had for more than a twelvemonth been troubled with a Diarrhœa. He had, in general, five or six purging stools a-day, and his digestion was now so much impaired, that what he eat

* Vol. II. p. 65.

was either thrown up again, or passed off undigested. He wasted away, and was somewhat feverish towards evening. The only medicines he had taken before I saw him, were occasional laxatives, and Rhubarb; both of which had afforded him some, but no permanent relief. He was often exposed to wet, and his manner of living in general such as by no means favoured a cure. I gave him equal parts of the Angustura Tincture, and Vinous Tinct. of Rhubarb, and directed a large tea-spoonful to be taken twice a-day in water. He soon mended considerably, and was after a fortnight nearly well. From inattention his complaint however returned; the medicine was resumed, and continued altogether about a month longer, when he had recovered completely. As the drops agreed so well, I would not change them, but apprehend not much can be due to the small quantity of Tinct. of Rhubarb, since this drug had been taken much more freely before, with so little effect.

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A Lady

A Lady was, in the eighth month of her pregnancy, attacked with a purging, which gave her five or six forcing motions in the morning, and then left her for the remainder of the day. Feeling herself well in other respects, she paid not much attention to this complaint; but, on the fourth day, the forcing having been violent in the morning, a considerable discharge of blood from the uterus, without any pain, followed about noon. I took away eight ounces of blood in the afternoon, and at night gave a draught with ten drachms of the Angustura Mixture, and ten drops of Tinct. of Opium, which was omitted in the draught she took the following morning. Her bowels remained easy the next day: the draught, with Opium, was repeated at night, and as she had no stool, a gentle saline laxative was given the morning after. Two more doses of the Angustura Mixture alone were taken by way of prevention, and her purging did not return: About a week after, some exertion brought

brought on the flooding again, but this soon gave way to small doses of Opium, with Tincture of Roses, which did not bind her. She continued free from complaint, and has since been safely delivered of a healthy child.

Dr. WILLAN gave to an old man, who laboured under a chronic Diarrhœa, fifteen grains of the powder three times a-day. He recovered in about ten days.

The following is an Extract of a Letter from Dr. HALIDAY, at Belfast, to Sir G. ATKINSON at Hillsborough, communicated to me by Dr. TURTON.

After mentioning that Col. L— had been confined upwards of three weeks in consequence of a severe accident, the Doctor says, “ I understood (on Sunday) that he had been seized with a violent diarrhœa in the night of the Wednesday preceding, which had gone on unremittingly, and with most exhausting effect, notwithstanding a variety of astringents, &c. which had been made use of, with full doses of Tinct. Thebaica. When I came

came to his bed-side, I found him quite sunk and exhausted, with a feeble intermitting pulse; his aspect desponding, and exceedingly morbid, not to say moribund. I proposed trying the Angustura, which was very candidly assented to by the other medical gentlemen. As the little I was possessed of had only been digesting a few hours*, we agreed to give one drachm of it, turbid, with five drops of *Tinct. Theb.* every three hours. It appeared to have a very speedy effect in lessening the diarrhœa, and improving the pulse, which, besides occasionally intermitting, was at one time singularly slow; in short, in less than two days we found it unnecessary to give it so frequently, and scarcely at all after Tuesday night: I saw him sitting up in his chair on Thursday morning, and found it expedient to direct a domestic clyster. He afterwards went out in a carriage, and had our consent to begin his journey

* One ounce of coarse powder had been put into a pint of proof-spirit.

home on the Tuesday following. I thought this hasty narrative would be some little return for your kindness in favouring me with the pamphlet, and a specimen of its subject; and am, &c."

Dr. LETTSON also speaks highly of the salutary effects of the Angustura in those habitual diarrhœas, to which persons who have long resided in warm climates are more particularly subject, and of which he gives two remarkable cases*. He has likewise found it very useful in the diarrhœas of children, attendant on enlarged mesenteric glands.

Mr. WILKINSON tells me, that in the months of April and May 1792, many, chiefly females of the lower class, were attacked with diarrhœas accompanied with some symptoms of dysentery; for the gripings were severe, and the mucous discharges were attended with tenesmus. After premising some of the milder laxatives, the Angustura was given in powder, in doses of

* Medical Communications, Vol. IV.

from

from ten to fifteen grains. To some I gave the Infusion, or Decoction, which appeared to me greatly preferable to the powder. I occasionally added three or four drops of Tinct. *Cepii* to a dose, and gave two or three table-spoonfuls from two to four times a-day. In some cases the disease was removed by six or eight doses, and the very worst seldom required more than twelve or eighteen. Several of these patients had been ill a fortnight or three weeks, and had taken without much advantage various other remedies previous to their entering on the use of the *Angustura*."

He also speaks of the good effects of this Bark in diarrhoeas, sometimes attended with dysenteric symptoms, in two papers, the first of which is inserted in the *London Medical Journal**, and the other in the *Medical Facts and Observations*†. In the latter there is the following case communicated by Dr. COLLINGWOOD: "A married woman, twenty-five years of age, was attacked three

* Vol. XI. p. 337.

† Vol. II. p. 52. seq.

weeks

weeks after delivery with a diarrhoea. Various remedies of the tonic and astringent class were employed, from some of which she experienced good effects, but none of them afforded her permanent relief. She continued in this state, better and worse, till six months had elapsed; and as the disease still remained, I advised her to wean the child: this was complied with, but no good was produced. To repeat the variety of means, both of medicine and diet, that were adopted, would be tedious. Every thing seemed in vain; for after a period of ten months from its commencement, the complaint had reduced her to an extreme exhaustion and debility of body; her appetite was depraved, her eyes appeared sunk, her complexion was quite fallow, her pulse quick and weak, and her stools frequently amounted to the number of twelve, fourteen, and latterly twenty, or more, in the space of twenty-four hours. When you gave me some of the Angustura Bark, I must confess, that

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before I tried it, I despaired of its succeeding in this case; the event however agreeably disappointed me. I began by the exhibition of an emetic of Ipecacuanha) several of which had been administered before): she then took ten grains of Angustura Bark in powder, in rice-water, after every stool. The very first dose relieved her; and when she had taken five, the diarrhœa seemed to cease, and she recovered by the repetition of a few more doses; the whole of which amounted to a dozen: her appetite and digestion soon improved, and at the end of three weeks she was perfectly cured."

Dr. FILTER also relates several cases where the Angustura succeeded in very obstinate diarrhœas*.

* Differt. p. 21.

IN AGUES, AND OTHER INTERMIT-
TENT COMPLAINTS.

AS a Febrifuge, the Angustura Bark has shewn uncommon powers, and been used in intermittent and other fevers with the greatest success. To insure this, the same preparatives, and nearly the same precautions appear necessary as with the Peruvian Bark. Exclusive of the small dose, the Angustura would seem to possess the additional advantage of leaving the patient in less danger of a relapse: but with regard to this, so much depends on accidental circumstances, that it will require very ample experience fully to ascertain the point.

As Agues are a disease, in which the effect of a medicine is most clearly seen, I shall begin with them, and relate some of the strongest cases.

A Pauper applied to me on the 20th of February 1790, who had been ill of an Ague since Michaelmas; this had at first returned

every third day, but for the last two months every fourth. Her age was forty-six. She had lain in three years before, and since that not been regular. She lived in a damp cellar, was extremely poor, and had, by her account, taken no medicine whatever. I found her very pale and much reduced, the appetite gone, her tongue very foul: she was costive, and often sick at stomach, had a little cough and shortness of breath: the abdomen was considerably swelled, and she passed but little high-coloured urine, and this with difficulty.

I began with giving her a solution of one ounce of Epsom Salts and one grain and a half of Emetic Tartar, in eight ounces of Mint-water, and directed two table-spoonfuls to be taken every four hours, till it should operate moderately.

On the 22d I saw her again; she had taken only three doses of the mixture, and ever since continued to vomit. Much green and offensive stuff had been thrown up, and there

there was a more free discharge of urine, but she was very weak. This was her bad day, and the ague came on while she was with me. I gave her a cordial mixture with some Aromatic Confection, of which she was to take two table-spoonfuls occasionally; and twelve powders of fifteen grains of Angustura, directing her to take one as soon as the paroxysm should abate, in some water, and to repeat it every three hours; adding, that as her ague would probably not leave her at once, she should, in case of a return, stop during the fit, and afterwards resume the medicine.

She did not come again till the 2d of March. During the first intermission she had taken seven doses, which so far stopped her ague, that at the time of the next paroxysm she only felt a slight stiffness in her limbs. She continued taking the powders, but at much longer intervals than I advised, and had only taken the last that morning. Her ague had not returned, the vomiting had
ceased,

ceased, her appetite began to come, and her urine continued to pass more freely: the stools were more regular, her complexion better, and the cough and breath also rather mended: but she was still very weak, had profuse sweats, and the abdomen continued large and hard. I directed this to be well rubbed with some volatile camphorated Liniment; gave her two ounces of Tinct. of Angustura with two drachms of acid Elixir of Vitriol, one tea-spoonful to be taken twice a day; and every third or fourth night a pill, consisting of five grains of Cathartic Extract, and one of Calomel. To these I added some red Port-wine, advising her to make that, mixed with water, her constant drink.

By the 9th, she was in every respect better. Her menses had re-appeared some days before, with considerable violence, and rather lowered her; but she had felt no symptom of her ague. Of the medicines little had been taken, as she was uncertain whether they would, under these circumstances, be right.

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The swelling of the abdomen was much diminished. I wished her, for a time, to omit the pills, but to take the drops freely, and saw no more of her for some months, when she told me she had been during that time quite well; but getting wet, while at work in the fields, she had a slight ague-fit the day before. This, however, on taking two or three of the Angustura Powders, disappeared, and she has had no return since.

A Coachman, aged thirty, a hard drinker, was, in March, attacked with an ague. He came to me the next day, much frightened, as he had three years before laboured under the same complaint full five months, though he had swallowed very large quantities of Peruvian Bark, and other febrifuge medicines. I gave him an emetic, and an opiate at night. The paroxysm returned the next morning, and as soon as it was nearly off, he began with taking fifteen grains of Angustura Powder, which were repeated every three hours. He had no return, though he had

had only taken five or six doses by the time it should have happened. I desired the medicine to be continued two or three times a-day, for a few days, but have reason to doubt whether he complied. He all along continued to drive his coach in very unfavourable weather, and soon drank as freely as ever; but had no relapse for several months that he continued in the same family.

An unmarried young woman was seized with a Tertian Ague towards the end of May, for which, by the advice of another gentleman, she, after an emetic, took on the 27th eight doses of powdered Peruvian Bark, consisting each of one drachm, in two tablespoonfuls of the Decoction; which was, together with the powders, repeated on the following day. The ague left her. About the 10th of June she had a relapse. I saw her on the 13th; and finding her former medicine had agreed well, directed her to take the same Bark Powders and Decoction every two hours during the intermission. It did

not

not appear necessary to premise any evac-
cuants. The fit however returned with
considerable violence: while it lasted, she
vomited a good deal, and could not after
this retain the Peruvian Bark, which, as it
was always thrown up again, she nauseated
exceedingly. Her menses now appeared,
and the reachings made the discharge at
times very violent. I then gave her twelve
doses of Angustura Powder, each containing
fifteen grains, one of which was to be taken
every three hours during the intermission, in
two table-spoonfuls of Mint-water, mixed
with a little Syrup, and Compound Tincture
of Cardamoms. These sat perfectly well on
her stomach. On the 19th she had a slight
return of the ague. The medicine was con-
tinued; and, on the 20th, she had six more
powders, with eighteen grains in each, given
her, which was all she took. She had no
returns, the menstrual discharge went regu-
larly on, and I saw her some months after in
perfect health.

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To a man aged thirty-eight, who had been ill of a Quotidian Ague two months, Dr. WILLAN, after premising an emetic, gave twenty grains of powdered Angustura Bark three times a day. The fit never returned. The same method was pursued, and with the same event, in another case of a Quotidian, which had continued three weeks. Another man, aged thirty, was cured of a Quotidian in a week. He has since frequently given it in Agues, in the same manner, and with similar success.

Mr. T. THOMAS, Surgeon, of Tunbridge-Wells, stopped a Tertian Ague which had continued a fortnight, by two doses of fifteen grains each, and no relapse happened. This gentleman had sent some of the Angustura Bark to Mr. CLARK, Surgeon, of Rye, in Sussex: an Extract from whose Letter, dated 14th April 1790, I shall subjoin.

“I first gave this Bark to a child about six or seven years old, who was greatly emaciated by an obstinate Tertian, which
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had continued near seven months. Emetics, and every other thing had been tried without effect. I began with giving five grains every two hours in the absence of the hot fit; and, though there had only been time to give two doses before the return of the next paroxysm, yet that was greatly mitigated: four or five more were taken during the next interval, which put off the fit. I continued it for a few days, but not so frequently; the child recovered very fast, and is now quite well. I found it affect the bowels at first, which induced me to combine it with a few grains of the Pulv. e Creta. comp.

“ The good effect which the medicine had on the child raised its reputation so much, that I had many applications in consequence, which gave me an opportunity of trying it in agues of the most obstinate kind, in Quotidians, Tertians, and Quartans; and, though I picked them, yet I found it equally efficacious, particularly in the case of a child

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about four years old, and a woman about forty."

For the two following cases I am indebted to Mr. BUTT:—"A Lady was seized in the summer of 1790, while on the Continent, with an Intermittent, for which she took many remedies without success. On her return to London in the ensuing winter, the Peruvian Bark was given, and soon stopped the fits. Having persevered in the use of it for what was thought a sufficient time, she left it off; but soon suffered a relapse. The Bark was again given, and again relieved her; but as soon as she ceased taking it at any time, the Tertian constantly appeared again. This continued many months, till she was much reduced by the disease, and completely tired of medicine. Early in 1791, she went into Suffex, and, on a more violent attack than usual, sent for Mr. BLACKMAN, of Boreham, who considering that the Peruvian Bark, having been taken in such
quan-

quantities, was not likely to afford a permanent relief, proposed a trial of the new Bark, as it was then called ; which being acceded to, he sent her eight ounces of the Angustura Mixture. This effectually relieved her, as she has had no return since, though that quantity was only once repeated some weeks after by way of preventive."

The following is also communicated by Mr. BLACKMAN:—" Mr. — was, in the autumn of 1791, attacked with a continued fever, against which the usual remedies were administered ; a remission soon took place, and the disorder gradually assumed a Tertian form. To stop this, the Peruvian Bark was given in substance, to the quantity of one ounce and a half, between the fits : this was repeated during three intermissions without effect. It was then omitted, and in its place the Red Bark administered for some days with no better success. The Angustura was now had recourse to, and given in doses of one scruple ; he had only one slight fit at the expected

expected time of return, and by persevering a few days in the use of the same medicine, he has since continued free from the complaint."

Mr. WILKINSON says, "Two cases of Intermittents have occurred to me wherein the powers of this medicine seemed greatly superior to those of the Peruvian Bark. One was a Tertian, in a patient thirty-four years of age, a seafaring man, who had contracted it at Middleburgh in Zealand. The fits, which returned with great regularity, were very long and violent. He had likewise a symptomatic jaundice, attended with costiveness and frequent sickness. After premising an emetic, exhibiting a saline purge or two, and a bolus of Calomel and Rhubarb, he took six doses of the pure powder of Angustura Bark, each containing ten grains. These put a stop to the disorder; and, by way of preventing a relapse, six powders more were given, which completed his cure.

"The other was a Quotidian. The patient was a young man, nineteen years of age,

age, who had taken several remedies prior to the use of the Angustura Bark, which was administered to him in the form of an infusion; to six ounces of which was added half an ounce of the tincture. Three spoonfuls of this mixture were directed to be taken every three hours, when the fit was absent. This quantity was repeated three times, and he was cured *."

In his second paper there are also two cases of Intermittents cured by the powder of Angustura; and one of a Tertian, by Mr. AKENHEAD, removed by the decoction. In another Tertian, which was afterwards stopped by the arsenical solution, it did not succeed; owing however in great measure to the patient's irregularity, so that it could hardly be said to have had a fair trial †. He has lately sent me a case of an obstinate autumnal Intermittent, contracted in the fenny part of Lincolnshire, which, after having

* Lond. Med. Journal, vol. xi. p. 336. f.

† Medical Facts, vol. ii. p. 56. seq.

continued

continued under various forms near three months, and where the patient, having found the Peruvian Bark disagree, could not be prevailed on to resume its use, was cured by ten drachms of Pulv. Angusturæ, given in doses from ten to fifteen grains, after proper evacuants had been premised.

Dr. FILTER, after observing that its power of stopping Intermittents has been called in question, is induced to ascribe its failure to some singular idiosyncrasy in the patients, or to some unknown fortuitous circumstance; since many physicians of the most extensive practice in various parts of Germany, are quoted by him as having had the completest success in the cure of Intermittents of every description by the exhibition of from five to twelve scruples of the powdered Angustura. Larger doses have rarely been required*.

The cases here selected would seem sufficiently to prove, that the Angustura Bark possesses the power of stopping agues safely

* Differt. p. 17.

and effectually, even under circumstances the most unfavourable, and in doses comparatively trifling. Reasoning upon its effect in analogous disorders, I hoped it might be found to answer in this, where we are least liable to be deceived as to the real operation of a medicine: and my success in the first instance which occurred, gave me the greater pleasure, as before I had myself an opportunity of trying this Bark, some medical gentlemen had assured me it would not cure an Intermittent. Yet even now, the opinions which I have been able to collect relative to its febrifuge power, are very various. Some consider it as greatly superior to the Peruvian Bark; others allow it a very limited and uncertain virtue; and some few deny it all. The majority however is decidedly in its favour. I so rarely meet with true, and still less with obstinate Intermittents, that my own experience does not authorise a decision: thus much however I may say, that where I have given it, the success has been constant and

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speedy.

speedy. A good deal may depend on the manner in which it is administered; and indeed I have known it given without premising any evacuant: the reason alleged was, that, as these will sometimes alone cure an Ague, the trial would otherwise not have been fair.

When it is considered, that the Peruvian Bark, which we now esteem our sheet-anchor, was, some time after its first introduction, thought so little efficacious, that its use was nearly abandoned, we shall be the less surpris'd at the diversity of sentiments (all supported by experience) respecting the Angustura; however, as cases will occur to every practitioner, where an ague becomes a very troublesome disease, either because the Peruvian Bark does not agree, or fails in its effect; in such, at least, the Angustura must deserve to be tried as a substitute in preference to the uncouth and dangerous compositions which have been employed.

In various other periodical complaints, I have frequently given the Angustura with advantage.

advantage. A woman, about thirty, of a delicate habit, was in December 1789 attacked with a fever, attended with a quick pulse, foul tongue, total loss of appetite, great lowness of spirits, costiveness, and want of rest. With these a sinking, or faintness, came on regularly about eleven or twelve at noon, and lasted a couple of hours, during which she felt too weak to walk even across the room. It then left her, and she could, though with difficulty, again do her usual work. I gave her a laxative mixture with Mindererus's Spirit and a gentle antimonial, which operated freely, but did not relieve her much, at least the periodical faintings continued; worse however every other day. She now took a draught twice a day, consisting of eight grains of Puly. Angusturæ, five of Magnesia, and some Mint-water; my intention being, if this agreed, to increase the dose, and give it more frequently: but her amendment was such, that I thought it needless to make a change, and after having taken the

medicine only four days, she got completely well, and has continued so.

During the intermissions, or even remissions only, of those aguish pains of the head and face, which often prove a most troublesome disease, I have very frequently given this Bark with the best effect : indeed it has hardly failed, except in some few cases where the disease originated from and was kept up by a carious tooth, though many were severe and had proved refractory to other powerful remedies, such as Peruvian Bark, Blisters, Opium combined with antimonials, &c. Where the disease was considerable, or the remissions not sufficiently distinct, I have found it necessary to premise the same preparatives as in agues, and observed that the occasional interposition of a mild laxative during the use of the Angustura, assisted the cure. In slight attacks I generally give it without any preparation. One very obstinate case has occurred, where the violence of the pain in some degree affected the intellects, and

and threatened the sight of both eyes, occasioning a most immoderate flow of tears during the attack. I prescribed an emetic, and afterwards 15 grains of Pulv. Angusturæ every two hours during the short, but tolerably distinct remissions. Eight or ten doses were thus taken, yet the patient suffered two equally severe returns. The third came earlier and was less violent. As she was costive, a gentle laxative was given and the Angustura afterwards resumed. She had two or three more trifling paroxysms; the powders were taken less often, and latterly only night and morning, and she perfectly recovered, nor has had any relapse. She took altogether nine drachms.

Many of my friends have experienced similar good effects from it. Mr. THOMAS of Windsor, had a delicate young woman under his care, who had been afflicted with a periodical pain on one side of her face every other night for two months. She had taken Peruvian Bark, Opiates, and
various

various other medicines without any permanent relief. He advised an emetic, and afterwards gave 15 grains of the Pulv. Angusturæ, with a tea-spoonful of the tincture, three times a day. She had two regular returns of pain; the third came on some hours earlier, and did not last so long, and the fourth and last was very trifling. The powders were continued twice a day for a week after: she recovered health and strength, and had been perfectly well upwards of three weeks when this account was written.

To a young lady who had been frequently subject to a pain in the gums and lower jaw, he gave some of the Tincture, and desired she would take two tea-spoonfuls in water whenever the complaint seized her. This answered completely, and one dose only, in general, affords her speedy relief.

Mr. WILKINSON also bears testimony to its merit in complaints of this nature, and in other irregular Intermittents. His words are;

“ A case

“ A case of periodical head-ach occurred, which attacked the patient with great violence, and for which various remedies were prescribed ; as Tincture of Opium and Antimonial-wine, during the fit ; and Peruvian Bark in considerable quantities in the intervals of the paroxysms ; but without effect. The complaint, however, was removed by administering six or eight doses, of ten grains each, of the Angustura Bark in powder, every three or four hours, in a glass of white wine and water.

“ In two or three cases of violent tooth-ach, attended with excruciating pain, a general affection of the system, and evening paroxysms resembling the fit of an ague, this Bark has proved of singular service. One of these, which had continued a long time, and for which the Peruvian Bark had been given without effect, was cured by six doses of the Angustura, each consisting only of six grains of the powder, without any other addition *.”

* Lond. Med. Journal vol. xi. 335.

FEVERS, MORTIFICATIONS, &c.

I HAVE so often witnessed the good effects of the Angustura in irregular and low, or nervous fevers, and found it so much less apt to disagree with the stomach, or run off by the bowels than the Peruvian Bark, that I now always give it the preference. The decoction is what I in general use, often alone, sometimes joined with Aromatic Confection, Mindererus's Spirit, &c. In putrid fevers I have myself had no opportunity of trying this Bark, but should without hesitation have trusted to it from what I had observed of its efficacy in diseases of a similar tendency, and on account of its great antiseptic power out of the human body. Experience has proved this good opinion well founded.

Dr. GRIEVE lately gave the Angustura decoction, combined with small doses of Laudanum, in a case of truly putrid fever, attended with a diarrhoea, with the best success. This, and red Port-wine, were alone
trusted

trusted to, and the patient soon recovered. Circumstances made it highly probable, that the Peruvian Bark would not, on account of the diarrhoea, have answered.

Dr. LETTSOM also speaks highly of its utility in fevers of the low, nervous, and putrid kinds*, especially when instead of a favourable crisis a local determination to the abdomen ensues, attended often with violent and fatal dysenteric symptoms. The Doctor observes, "That if any remedy from experience merits encomium in this dreadful stadium, it is this: that various instances might be adduced in proof, but one very strong case is selected, attended with numerous *Petechiæ Vibices* and other symptoms of great putrescency. He first saw her on the twenty-third day of the fever, and had reason to think that the previous treatment had been very proper. The Peruvian Bark with Vitriolic Acid, Opiates and wine were given; but a profuse and bloody diarrhoea coming on, rendered

* Medical Communications, Vol. iv.

every attempt to raise the sinking patient ineffectual: Her pulse was scarcely perceptible and the face beginning to appear hippocratic, so that a recovery could not be expected. By the use of the *Angustura* decoction, however, to one ounce and a half of which were added first three, then two drops of Tinct. *Thebaica*, and which was given in the beginning every three hours, and afterwards less frequently, the dysentery was gradually lessened, and on the fourth day ceased, and the strength improved. On the 5th day the Doctor left her every way recovering, and she afterwards got quite well."

The following singular case not only speaks strongly for the antiseptic power of the *Angustura* Bark, but also affords an instance in which the smallness of the dose necessary, contributed in all probability to save the life of the patient.

A middle-aged married woman, whose health had for some years been very bad, consulted me for a swelled face, which had come on a few days before I saw her. The swelling

swelling was universal, rather hard, and so considerable as nearly to close both her eyes; yet the glands of the neck were not much affected. There was no appearance whatever of inflammation, the pulse was quick, but low; she complained of great languor, and what little could be seen of the tongue was very foul. She loathed all food, complained of sickness at the stomach, and was rather costive. It was impossible to examine the fauces, but she swallowed with tolerable ease; and though her face was exceedingly painful, she felt but little soreness in the throat. I directed her to take two table-spoonfuls of a solution of one ounce of Epsom salt and one grain of emetic tartar in eight ounces of water every three hours till it should operate sufficiently. This purged, but did not vomit her. I then gave her a mixture with Aromatic Confection, Mindererus's spirit and Peppermint water, put a blister between her shoulders, and advised the frequent use of a gently stimulating gargle injected with a syringe. This relieved her much, the swelling

subsided considerably, and she appeared in every respect much better: I now added some *Dec. Peruv.* to the mixture in place of the water, and left her so well on the 18th of July, that I thought it not necessary to see her on the 19th.

On the 20th, however, I found her much worse. She complained of extreme tenderness and pain in the mouth, so as to be prevented almost from swallowing any thing except the mildest liquids, and had bled so much at the mouth during the night, that she dare not attempt to sleep for fear of being suffocated. I still met with considerable difficulty in examining her mouth, but saw however that the tongue and roof were full of brown aphthæ, and that a large black slough covered the inside of either cheek. The smell was extremely offensive indeed; the pulse was quick and low, but regular, and the extremities were cold. She was desired often to inject the following gargle:

℞ *Decoct. Peruv.* ℥vij.—*Tinct. Opii* ℥ij. *Mellis Rosar* ℥j.—*Acid. Muriat. q. s. ad grat. acid.*

To take frequently of her mixture, and to drink red Port-wine. This however gave her such exquisite pain, that she was obliged to dilute it much, and even then got down but little. On the whole she was somewhat relieved in the evening, and the hæmorrhage lessened in the course of the day: yet she passed the night very ill, the bleeding not allowing her to sleep, and was worse again the following morning. The gargle was continued; she was directed to take two scruples of Pulv. C. Peruv. every three hours in some decoction of Peruvian Bark, acidulated with Vitriolic Acid, and the mouth was frequently cleansed with Honey of Roses and Alum. ust. The powders gave her such pain in swallowing, and afterwards disagreed so much with her stomach, that she could only be prevailed on to take two: the bleeding continued however rather to diminish, and part of the sloughs came away; yet the extreme tenderness and fœtor remained; she was very low, and had fainted several times, by merely attempting to sit up in bed.

I now

I now gave her the following powders :

R Pulv. C. Angust. ʒj.—Ol. Caryoph. gt. iv. M. & divide in pulv. viij.

Of these she was to take one every two hours in a little weak wine and water, as the acedulous mixture much augmented her pain : the gargle and honey of roses were continued, and the body was all along kept open by clysters. When I saw her again, she had taken three of the powders easily enough, and was much better ; her mouth looked cleaner, and the foetor was diminished. She continued to take them every three, and after another day every four hours, and mended fast. The sloughs soon came away, the mouth cleansed and healed, and her appetite returned. It appeared however that the disease had extended down a part of the throat, as pieces of black slough continued to be discharged for several days after the mouth had become perfectly clean. The disorder left her very weak, but she gradually recovered by continuing the powders only, of which she latterly took but two or three a day, with an occasional gentle laxative.

tive. On the 2d of August I left her, rather in better health than before the attack.

Dr. WILLAN informs me, that several cases of Chronic Purpura have occurred to him during the winter of 1790, in which spots of the nature of *Petechiæ*, or more properly *Vibices*, appeared in many parts of the body. They gave way generally to an antiseptic regimen, and the free use of the Peruvian Bark and Vitriolic Acid. One patient however, a woman aged 54, had them all over her body, accompanied with an evening paroxysm of fever. She had been ill upwards of four months, and the remedies above-mentioned, together with various others, made no impression on the disorder.

He now gave her twenty grains of powder of Angustura Bark three times a day. She gradually recovered under the use of this medicine; and was, by taking it about a month, completely cured.

He was also called, about the tenth day
of

of the disease, to a man and his wife, ill of a contagious Fever, attended with delirium and diarrhœa. Other appropriate medicines having been before applied, he directed ten grains of the Pulv. C. Angust. to be taken three times a day: and by the use of this alone, the diarrhœa, with the other symptoms, gradually abated, and in little more than a week they both recovered.

Dr. EWER mentions its beneficial effect, used as an external application in a case of highly Putrid Fever. “ The patient’s skin was of a greenish yellow colour, and had a number of large livid spots; he had hiccough, and a vomiting of dark-coloured dissolved blood; a mortification had begun in his throat, and his strength was exceedingly exhausted. As neither the Peruvian Bark, nor any thing else, could be retained on the stomach, and as I did not think it right to trust to this (*the Angustura*) Bark given by injection alone, I ordered flannel, wetted with a strong warm decoction of this Bark, to be wrapped

wrapped round his body and extremities, and kept constantly wet. On seeing him a few hours after, I was agreeably surprized at finding the livid spots removed, the greenish colour of the skin gone off, and the hiccough and vomiting ceased. He could now keep the Peruvian Bark, mixed with a strong Infusion of this Bark, on his stomach; and soon after was able to take any kind of nourishment. As he complained of lying so long in wet clothes, his attendants discontinued the use of the fomentation, and in a few hours the greenish yellow colour of the skin, and the livid spots returned; but neither the vomiting nor hiccough. The fever was now increased considerably, and his strength diminished. The fomentation was again had recourse to, with the same, or even better success than before; for after it had been applied a few hours, he was so much better as to be able to get out of bed, and sit up without assistance. It was however again discontinued for the same reason as at first;

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and the symptoms returning, he died in two days *."

Though this case terminated fatally, it tended to prove the antiseptic powers of the *Angustura Bark*; and afforded a hope (which now appears in some degree realized), that it might prove an useful external application in mortification and gangrene.

In ulcerated Sore-Throats, and in that species of *Angina* which is accompanied with a scarlet eruption, this Bark has proved eminently useful. Internally I have generally given it in the following manner :

R. Decoct. Angustur. 3x.

Kali preparat :

Sacchari. aa. ʒj.

Tinct. Cinnamom. ʒss. m. f. haust. quartis vel sextis horis, cum uncia dimidia succi limonum recentis, in actu effervescentie sumendus.

The simple mixture has at the same time been employed by way of gargle, sometimes with the addition of a little mineral acid. In the Scarlet Fever especially, the use of the

* Lond. Med. Journal, vol. x. p. 156.

Angustura Bark, and occasional laxatives, have, in various instances (though in some the disease was very severe), totally prevented that swelling which so often succeeds to this disorder; and where there has been some appearance of it, a brisker evacuant or two, and the continued use of this Bark have soon removed it.

It has been given in a low fever, attended with aphthous ulcerations in the throat, and a very quick and low pulse, by Mr. NEWBOTT of Chiswell-street. The patient, a married woman, aged twenty-eight, of a very weak and relaxed habit, began with taking fifteen grains of the powdered Angustura Bark every four hours; and the dose was, by degrees, increased to twenty-five grains, given less often: but this occasioning some uneasiness at the stomach, it was reduced to twenty grains, which agreed very well. The medicine produced an immediate good effect, apparent by the increased vigour and diminished velocity of the pulse. On the third

P 2 day

day of exhibiting it, the ulcers had entirely disappeared, and the patient was enabled to sit up the greater part of the day, and could take some solid nourishment, when, for three weeks before, she had been wholly confined to her bed, and swallowed even fluids, not without extreme difficulty. In little more than a week she was well enough to walk abroad, and her health has continued to increase. When, from accidental circumstances, a little pain or uneasiness in the throat has since been felt, a recurrence to the medicine has soon removed it.

Mr. NEWBOTT adds, that though this patient had, before he saw her, taken a variety of medicines, yet the Peruvian Bark had not made a part; but that in many other instances in which he has tried the *Angustura*, the effects of this have, in a much smaller dose, appeared to him to be equally permanent, and much more decisive; and that in the above case the patient could in all probability not have borne a sufficient quantity

quantity of Peruvian Bark on her stomach to be of service.

Mr. WILKINSON, in his first paper on the Angustura Bark, says, "Nothing however has surprized me so much as the effects of this Bark as a Febrifuge: in some cases of low, or what is termed nervous fever, and in that sort of irregular Intermittent in children, usually called Worm-fever, I have experienced wonderful effects from it. In these I have given the Infusion with the Tincture, without any regard to intermissions*."

In his second paper he recites three cases of *Typhus* in which it proved eminently useful: one was attended with a diarrhœa and other symptoms, by which the patient had been reduced to a very hopeless state. In four cases of lying-in women attacked by fevers which assumed the form of remittents or Quotidians, he also used this Bark with great success, giving it chiefly in infusion or decoction during the remissions†:

* Lond. Med. Journal, vol. xi. p. 335.

† Medical Facts, vol. ii. p. 58.

Dr. FILTER also gives cases of malignant catarrhal and bilious fevers, in which the Peruvian Bark partly disagreed, by inducing costiveness, a sense of pressure in the abdomen, and a dry skin; but where the Angustura produced the most desirable effects, and soon restored the health of the patients*.

The fourth case in Dr. LETTSOM's paper† affords a striking instance of the utility of the Angustura in an abscess *in perinaeo*. This appeared on the ninth day after a severe labour. A large quantity of matter having been discharged from it, the decoction of Peruvian Bark was immediately given, and at first every thing went on well. Two days after its opening however the pulse sunk, the appetite was lost, a diarrhoea ensued, and the discharge became ichorous and foetid. The abdomen and groins were tumefied, and on pressing these, a large ichorous discharge issued from the abscess. As the Peruvian Bark appeared not only to pass off by stool,

* Dissert. p. 19.

† Med. Communication, vol. iv.

but probably even to keep up the diarrhœa ; and as Laudanum did not produce any good effect, he ordered one ounce and a half of the *Dec. Angusturæ* with four drops of *Tinct. Theb.* in each draught every six hours. The following day the diarrhœa was considerably abated, the ichorous discharge lessened, the appetite returned, and the inflation of the abdomen nearly subsided ; and by continuing the same medicine, the patient perfectly recovered.

The fifth is a very remarkable case of a spontaneous mortification in both feet, where the Peruvian Bark, in whatever form it was given, increased a diarrhœa, to which the patient was naturally rather disposed, though Opiates were added, and the Thebaic Extract given up to seven grains in the 24 hours. Warm cordials were also administered with red Port-wine increased to two bottles in the day ; and a variety of the most powerful topical applications employed. At last a decoction of Angustura and Snake-root was had recourse to, and
by

by the advice of Mr. BLIZARD, who also attended this gentleman, and who had in other cases of mortification experienced advantageous effects from the external application of the Angustura, a strong decoction of this Bark, with Tincture of Myrrh, was employed as a fomentation. To each dose of the internal medicine ten grains of the powdered Angustura Bark were afterwards added: the bowels kept easy, though the Opium was gradually diminished to a grain and a half in the day: the sphacelus by degrees separated, and a partial amputation was made of both feet. In a supplemental paragraph, the Doctor states the left as nearly well, and the right in the most healing state; only with reason to suppose that the *Os calcis* will largely exfoliate, or totally loosen: that the patient's health and appetite improve, and that the Angustura keeps his bowels in such order, that he can take the Tincture of Peruvian Bark with it.

Dr. FILTER gives a case of mortification of the *scrotum*, in which a strong decoction
of

of Angustura was applied outwardly ; and internally the powder was given combined with Opium, in the manner Mr. POTT gave the Peruvian Bark. The sphacelated part soon sloughed off, and the wound healed kindly*.

AS A GENERAL TONIC, &c.

THE Angustura Bark, where it is necessary to strengthen the system, appears to me far preferable, on the whole, to every other Tonic hitherto known; and all my friends who have made the trial, concur in bearing a similar testimony to its merit. On combining this Bark with Iron and its preparations, no sensible change takes place; whereas the astringent matter of most other corroborants forms a compound with this salutary metal, the effect of which may differ considerably from that which either, given separately, would have

* Diff. p. 25.

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exerted. Many cases also occur, particularly in those who have indulged in the use of spirituous liquors, where an impaired digestion and general weakness appear to be attended with some obstruction in the liver or other viscera: in these, astringent Tonics will often disagree. I have pursued the following method with advantage: every, or every other night, I give at bed-time enough of a warm laxative, with a very small proportion of Calomel in it, to move the body gently the following morning; and before breakfast, and dinner, ten or twelve drachms of the Angustura Mixture, to which I occasionally add one scruple of Alkaline Salt, and direct it to be taken with Lemon-juice during the effervescence. The powder has also a very good effect, in doses of twelve or fifteen grains, either alone, or combined with an absorbent.

In cases of *Chlorosis*, and of menstrual obstructions, owing to too languid a circulation, I have found the Angustura more generally useful than every other Tonic; and
many

many of my medical friends have experienced equal good effects from it. Both the Extract and Decoction have been given, combined in general with chalybeates, sometimes also with Myrrh, and fixed Alkaline Salts. Preparatory to, and occasionally during their use, gentle aloetic laxatives, with a small proportion of Calomel in them, will be necessary.

Dr. WILLAN informs me, that he has in several cases of simple *asthenia*, and in stomachs debilitated by the use of spirituous liquors, found the Infusion and the Tincture of the Angustura, very useful corroborants.

In a letter which I have received from Mr. GLENDENBERG at Suerin (in Germany), he tells me that the Angustura Bark, which I first made him acquainted with, is there held in the greatest esteem, as a strengthener, and that he has not heard of any instance where it disagreed with the stomach. He adds a case where a Physician advised it to a Lady of a consumptive habit, who had

for some time been afflicted with an obstinate uterine hæmorrhage, for which she had in vain tried the Peruvian Bark, and many other medicines. She took altogether about two ounces of the Pulv. Angusturæ; under its use her disorder very nearly ceased: she recovered strength, and was in the fairest way of getting quite well.

Mr. WILKINSON speaks favourably of this Bark, as a Tonic and Stomachic, saying, that as such it appears to him highly preferable to the Peruvian. That the frequent opportunities he has had of trying its effects in those disorders termed nervous, and what is usually called *Dyspepsia*, in most of which cases there exists a morbid irritability of the stomach and intestines, induce him to recommend it the more particularly, as he has experienced its utility in several instances of this sort.

That he has, however, generally found it necessary, when a quantity of bile or acidity prevailed in the first passages, and the patient

tient was subject to costiveness, to precede the exhibition of the Angustura by an emetic, or gentle laxatives, such as Magnesia, or Rhubarb; and to accompany its use with Soluble Tartar*.

In his second paper he also says, that he has administered it with success in numerous cases of *dyspepsia*, where the Peruvian Bark, and other medicines of the bitter class, had failed, and that the testimony of several of his medical friends (instances of which are given) is strongly in its favour†.

In the same paper, there is a case of Hooping-cough by Mr. SALKELD, in which, after other medicines had been used for a month, the Angustura Infusion, to four ounces of which were added 30 drops of *Tinct. Cantbar.* proved eminently useful‡. Its good effects induced Mr. WILKINSON to give it farther trial, the result of which

* Lond. Med. Journ. vol. xi. p. 338.

† Medical Facts, vol. ii. p. 66.

‡ Ibid. p. 70.

will

will be seen in the following extract of a letter he has lately favoured me with : “ The Chin-cough having prevailed greatly here for several months, I have given this Bark in many instances, and with great advantage. But it will only answer at a certain period of the disease ; for, thinking it might possess an antispasmodic power, I at first gave it, in a case or two, in the beginning ; and, the body being open, neither premised emetics nor laxatives ; but I soon found that it did not abate the violence of the cough, and that my patients were in other respects worse. I am now convinced that its good effects depend on its tonic powers ; and that, as after a certain time the disease is probably kept up by the irritable state of the parts affected, or of the habit in general, this is the period when the Angustura will be found highly useful. I therefore pursued the plan recommended by the late Dr. FOTHERGILL, till the febrile symptoms were diminished, and the determination to the lungs lessened, which

which will, even under the best treatment, happen sooner or later, according to the violence of the disorder. Then I gave, with the best effect, of the Infusion about one table-spoonful (more or less according to the age of the child) three or four times a day, to which were sometimes, though rarely, added a few drops of the *Tinct. Opii. Camph.* In some the cough went off in three or four days, in others more gradually; but in no instance did it continue beyond a fortnight from the time they began the use of the Bark. I have thus treated nine patients of various ages, from under two, up to thirteen years, and the quantity of the Infusion taken has been from six to twelve ounces."

Dr. COLLINGWOOD of Sunderland has also given it in the same manner in three obstinate cases of whooping-cough, and observed very sudden good effects from its use, as the symptoms soon diminished, the appetite returned, and the patients entirely recovered in a week or ten days.

Dr.

Dr. FILTER relates at length two cases in which extreme debility of body and mind, attended with frequent involuntary evacuations, was the consequence of certain criminal excesses; and against which Peruvian Bark, cold-bathing, chalybeate and other medicines had been used in vain, when the *Angustura*, freely given, produced the most wished-for effects. One of the patients took 30 grains six times a day for three weeks*.

Whether the *Angustura* Bark may possess any alterative, independent of its general strengthening powers, cannot be ascertained but from varied and very numerous trials. The acrimony however with which its bitterness is blended, would lead one to consider it as preferable to other Tonics in such glandular complaints as are connected with a general languor of the circulation; and indeed I have given it with apparent considerable advantage, in indolent swellings of the glands, in the whooping-cough, and in some

* Differt. p. 23.

cutaneous eruptions : but other active medicines having preceded or accompanied its use, it becomes difficult to determine what share of praise may be due to this.

To a girl, about eight years old, who had long been subject to an eruption in the neck, which spread over part of the head, I had for some time given, without effect, pills consisting of equal parts of Extract of Peruvian Bark and Hemlock, with a very small proportion of Calomel, which had in many similar cases proved of service. Various external applications had also been used in vain. One ounce of Spermaceti Ointment, with one drachm of Calx of Zinc, afforded her most ease, but the eruption still rather spread. The ointment was continued, and I gave her four grains of the Resinous Extract of Angustura only, made into a pill, night and morning : in little more than a week she got quite well, and has had no return.

The state of ill-conditioned ulcers I have seen much mended by taking the Angustura

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Bark

Bark internally, and sprinkling it lightly on the fore, after this had been well cleansed with warm water. It gave at first considerable pain, but soon induced a much more laudable suppuration, and the ulcers healed fast under its use. The utility of these external applications of the Angustura Powder and Decoction is likewise noticed by Dr. FILTER* and Mr. WILKINSON†. The latter also mentions the good effects observed by Mr. SALKELD and himself from the Decoction of the Angustura applied as a collyrium in scrophulous ophthalmia‡. In both cases it afforded speedy and effectual relief. I have used the filtered decoction, as an eye-water, to weak eyes, and apparently with considerable advantage. It gives no pain.

Having thus enumerated the various diseases in which the Angustura Bark has proved of service, I shall here subjoin the general observations of several eminent Phy-

* Diff. p. 25.

† Medical Facts, vol. 2. p. 72.

‡ Ibid. p. 71.

ficians on this Bark, which could not so well have been inserted elsewhere*. Those of Dr. PEARSON, Physician to St. George's Hospital, were annexed to the first Edition in an Appendix, and are contained in the following letter, which he then favoured me with in consequence of an occasional conversation on the subject, and which he still adheres to.

“ DEAR SIR, Leicester-square, March 20, 1791.

“ Agreeably to your wish, I send you some observations on the effects of the Bark lately imported under the name of Angustura; and I feel much satisfaction in your intention of publishing an account of this medicine.

“ Two years ago several pounds of the Angustura Bark were sent to me for trial by Mr. RENDALL, with two letters from Trinidad, dated August, 1788, mentioning that it had been found to be a substitute for the

* For Dr. Winterbottom's, see page 65.

Peruvian Bark, and even to be more efficacious; as it had cured Intermittent Fevers, and other diseases, that would not yield to the Cinchona.

“ In March and April 1789, I prescribed for several cases of Tertian Intermittent Fevers, fifteen to twenty grains of the powder of this Bark, to be taken every three or four hours, in the intermissions; ordering no other medicine. Some of these fevers were apparently cured by this Bark, but none of them sooner, and some of them not so soon, as they usually are by the Cinchona; others were not removed by this new medicine, given for the time in which the Peruvian Bark generally succeeds, but readily gave way to the Arsenical Salts, or the Cinchona.

“ From the sensible qualities of the Angustura Bark, it appeared reasonable to suppose, that this medicine might be more efficacious as a strengthener, and stimulant of the organs of digestion, than any of the bitter vegetable substances in the present *Materia Medica*,
possessed

possessing the peculiar bitterness of the camomile flower, as well as its warmth, in a much more intense degree, and being of considerably greater specific gravity, than the powder of this flower. The Camomile I have ever found one of the most agreeable vegetable bitters to weak stomachs; but in powder it can seldom be exhibited in sufficient quantity, on account of its bulk.

“ Instead of considering the Angustura Bark as possessing the virtues of the Cinchona, I think it may be more justly regarded as a medicine that will produce the effects of the warm vegetable bitters, especially of the Camomile, but with more efficacy, and more agreeably to the palate and stomach; and consequently render all the other articles under the head of *Amara calida* unnecessary. Accordingly I have prescribed it during the two last years, in several hundred cases, with the view of exciting the appetite for food, and of assisting the digestive powers; as in the *Dyspepsia*, occasioned by the
immoderate

immoderate use of fermented liquors, especially of one of their ingredients, namely, Spirit—in various chronical disorders attended or produced by weakness of the organs of digestion, *viz.* in Dropsies, Indurated Abdominal Viscera, &c.—in the *Hysteria*, attended by failure of the appetite for food, Flatulency and Acidity in the Stomach, in which the Tincture of this medicine was remarkably agreeable, and would sometimes remain in the stomach when every thing else had been rejected by vomiting;—and in the convalescent state after Fevers, when the appetite had not returned. In all these disorders of the stomach I have found no vegetable bitter so serviceable as the Angustura Bark, but I have frequently thought it more efficacious, in those cases which required a very long use of it, not to exhibit it for more than three or four weeks together, but then to discontinue this bitter, and to prescribe a Tonic of a totally different nature, such as the Metallic Substances; and of these I have
found

found no preparation better than the Solution of Iron in the Marine, or Vitriolic Æther. By the administration of these two different kinds of Tonics alternately, and sometimes by the exhibition also, once a week or fortnight, of an emetic of Vitriol of Zinc, I have had the satisfaction of seeing many cases relieved which I had reason to think would not have been benefited by other medicines.

“ With respect to the preparations of this Bark, I have, in general, preferred the Tincture. It has been made these two last years in St. George’s Hospital, by digesting one pound of the coarsely-powdered Angustura Bark in a gallon of Proof Spirit. I confess I gave these proportions without any experiments, and probably a smaller quantity of this substance would saturate this bulk of the menstruum. The dose of the Tincture which I ordered was one to two teaspoonfuls, once, to three or four times, a day, in water.

“ When the spirit heated the patient, I gave the Infusion, made by adding two drachms

drachms of this Bark, coarsely powdered, to eight ounces of boiling water.

“ Excepting in Intermittent Fevers, I have seldom prescribed the Angustura Bark in substance ; but I have learned, from yourself, that it is a valuable medicine in that form in the Dysentery. I remain, dear Sir,

“ Yours very sincerely,

“ GEORGE PEARSON.”

Dr. WILLAN informs me, that he continues to use the Angustura with the best effect in the various diseases against which he had before given it; and that he has in several cases employed it with success in agues, exhibiting it in the intermissions, after premising an emetic, in doses of half a drachm three times a day.

Dr. WITHERING of Birmingham, in a letter to Dr. DUNCAN*, says, “ The Angustura Bark promises to be a useful addition to the Materia Medica. It has been service-

* Medical Commentaries for 1791, p. 367.

able in several cases of debility, connected with affections of the stomach and bowels, which did not admit the usual course of Peruvian Bark without the addition of Opium: and in autumnal diarrhœas, it has contributed much to the cure. It has succeeded well in some perfect, and some distinct Intermittents; but I am not yet able to speak of it fully on the basis of large experience, as the medicine has only of late been diffused through the shops."

The following estimate of the powers of the Angustura by Dr. LETTSOM, I have collected from his paper on the subject, which has been often referred to. He says, "That he has as yet had no experience of its effects in epidemic dysenteries, but that it appears to him to possess curative properties so peculiar to itself, as to entitle it to a superiority over every other medicine hitherto usually employed.

"That if he might contrast the virtues of this Bark with the Peruvian, he should con-

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ceive

ceive their qualities different. In all regular intermissions of fever, he should be induced to prefer the latter, even in those of Typhus, as well as the common Intermittent; but in that state of low, nervous, and putrid fevers near the crisis, when the fever shall still predominate with short remissions, and yet the prostration of strength be so considerable as to threaten the existence of the patient, so that the emergency calls for some immediate tonic, besides wine and other fermented cordials; and also in the dysenteric Typhus (described in the first and sixth cases of Dr. LETTSOM's paper) he conceives there is reason to prefer the Angustura. Likewise in such habits where a tonic is wanted, but where, from some unknown Idiosyncrasy, the Peruvian Bark cannot be made to agree."

With regard to Dr. PEARSON's opinion of the Angustura (as expressed in the Appendix to the former edition of this Essay *) Dr. LETTSOM remarks, "That he cannot ima-

* See page 123, seq.

gine, from the cases he has related, that its medicinal effects depend so much on its bitter quality, as on its tonic, antiseptic, and febrifuge powers; since he would not, with LINNÆUS, prefer that most powerful of bitters, the *Quassia amara*, as a Febrifuge to the Peruvian Bark. That from the trials he has made in about fifty cases, the virtues of the Angustura appear to him to approach nearer to those of Peruvian Bark, than of Chamomile flowers, or any simple bitter in the Materia Medica; but with more astringent, and, perhaps, less febrifuge powers, than the native of Peru. That the Tincture is, according to his observation, more restraining than the Decoction; and has been used by him lately, given alone in water, with singular advantage as a tonic, restraining, and stomachic medicine."

I have taken much of the Angustura myself, and given it in numerous instances to others, attending to its effects with a mind

free, I would hope, from prejudice. If I might be permitted to give the opinion my observation has led me to form, it is as follows: I consider it as possessing every virtue of the Peruvian Bark, with these advantages, that it is in general less apt to disagree, acts in much smaller doses, and, I would almost say, gives a greater degree of vigour to the system: in addition to which, it has a power in removing such complaints of the bowels as arise from a vitiated state of the humours, which no other drug I am acquainted with can lay claim to. To account for its, often exceeding sudden, action in these cases would be difficult: it may depend on its antiseptic property; but that it does not on its astringency, would appear probable, partly from the experiments, partly also from this, that in diarrhœas arising from mere relaxation it will not be found equally efficacious with Lime-water, *Extr. L. Campech.* or other such decided astringents. In epidemic dysenteries, its vir-

tue is not yet ascertained; but its effects in the sporadic disease, and particularly in the dysenteric Typhus (which I consider as very similar to the epidemic in its worst state), afford good grounds for thinking that it will, with proper management, succeed. It is an arduous task justly to appreciate the character of a medicine, for which some predilection has once been formed: I have therefore felt much satisfaction in finding that the experience of abler judges has, in a great measure, established the reality of the merit I had attributed to the Angustura; and trust that the more this Bark is known, the more will it be esteemed.

THE END.

